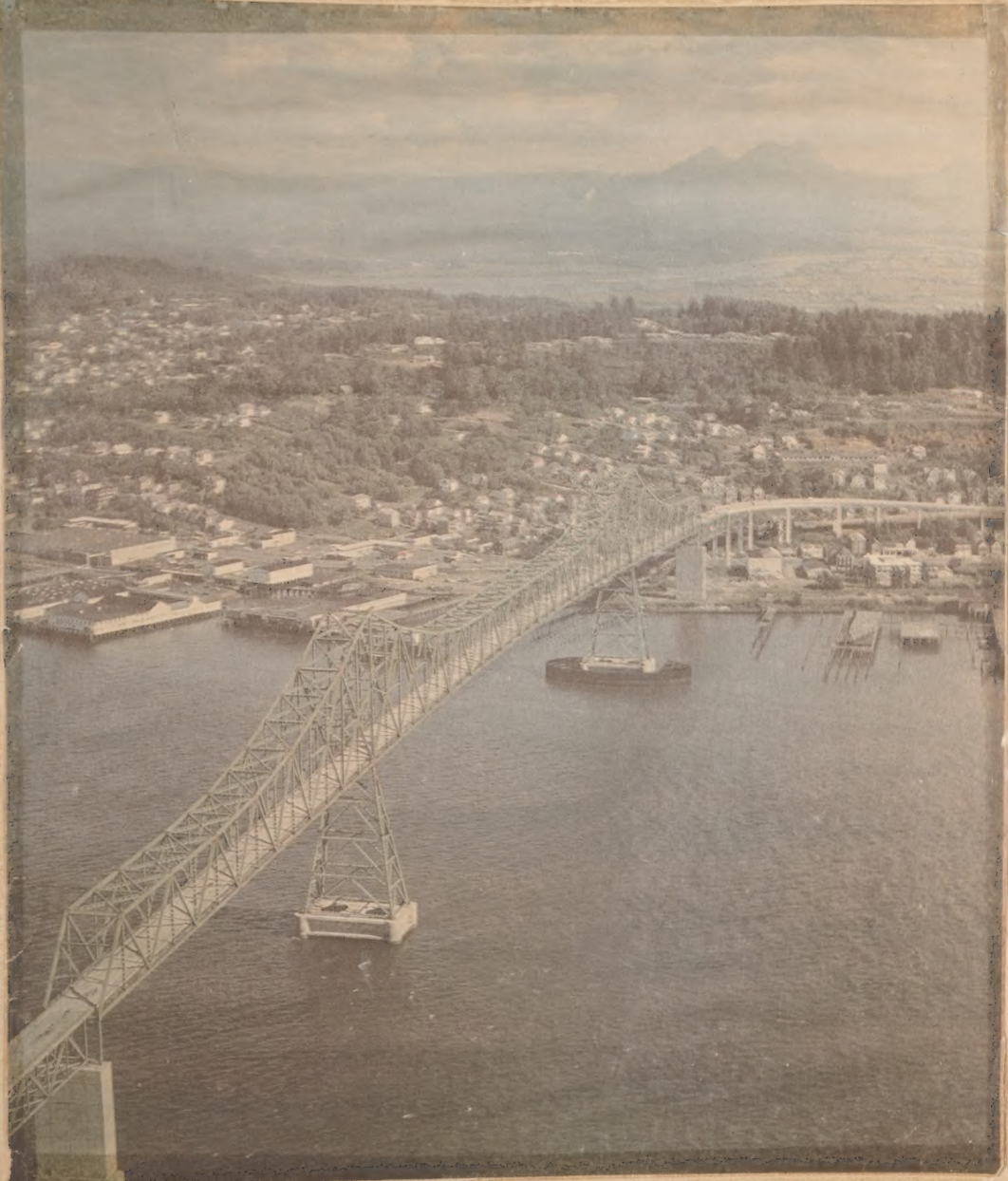


99



ASTORIA BRIDGE

Longest Continuous 3 Span Through Truss In The World
Crossing The Columbia River, Astoria, Ore., -Pt. Ellis Wash.

DEDICATION - AUGUST 27, 1966

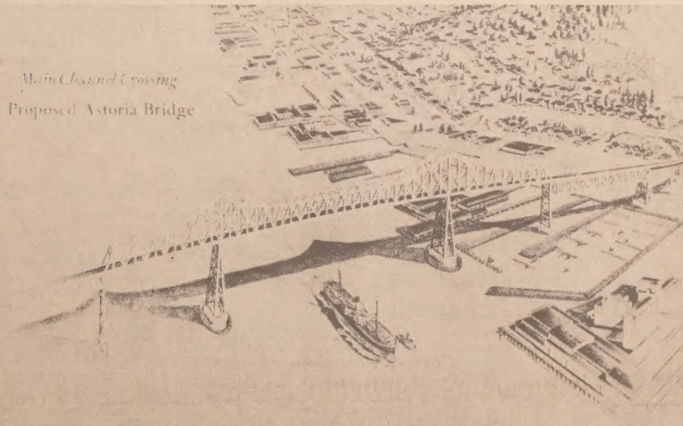


BRIDGE BILLS

Astorian Evening Budget

Vol. 85, No. 96 Astoria, Oregon, Tuesday, April 21, 1959 PRICE 7c

Span Design Set For Engineers



Here's what it will look like! The above drawing illustrates the type of bridge to be constructed spanning the Columbia between Astoria and Megler, Wash. Funds to finance the construction won final legislative approval in the Oregon House of Representatives

today. Only the Governor's signature, and the concurrence of the State of Washington in an agreement stand in the way of construction. Gov. Hatfield said today in Salem he expects to attend ground-breaking ceremonies in Astoria during his administration.

Final Legislative Bar Is Hurdled By 44-15 Vote

Astoria's trans-Columbia bridge bonding bill, with an amendment for four million dollars for Highway 42 improvements tacked to its girders, soared over determined opposition in the Oregon House of Representatives today to win final legislative approval by a resounding vote of 44 to 15.

In something more than 50 tense, exciting minutes the dream of a generation of Lower Columbians came true.

Immediate action to hurdle the final obstacles in the path of construction of the \$24 million project was pledged minutes after the final vote by Oregon's Governor Mark Hatfield.

He pledged the help of all the resources of his office and the administration.

For the second time in as many weeks Clatsop county Representative W. H. Holmstrom led the floor fight which ended with the final approval of the project. The House had earlier approved the bonding bill for \$24 million dollars without funds for Highway 42 improvements. The Senate added four million for the Highway 42 work and sent the measure back to the House where it won final triumph today.

The vote climaxed an anxious April for Lower Columbians . . . but behind the hectic weeks in which the bill won final approval . . . the years of planning, dreaming and fighting, and the work of scores of fighters for the project.

More than a quarter of century ago, with approval of the bonding bill for construction of five bridges

on the Oregon Coast highway, Astoria began agitation for the final link . . . the span from Astoria to Megler, Wash.

Gov. Hatfield hailed today's triumph, in an interview with Herman Robison of radio station KAST, as "great action" not only for the people of the area, but for all of Oregon.

In pledging immediate action to push for a construction start Gov. Hatfield said:

"I believe we must move quickly toward early accomplishment of construction of the bridge and I can see no reason for delay. Gov. Roberto Rosellini, of Washington, assures us in his statement of support, which will insure good leadership in Washington. He is fully acquainted with what needs to be done."

The governor added that the administrative branch of Oregon's government will move as fast as possible. He said, "there are many preliminaries that can be attacked at once."

Action by the Oregon House leaves just two major grips in the path of construction of the bridge . . . signature by Gov. Hatfield and the agreement with Washington state. The governor will probably sign the measure before Friday.

Expectations are that an informal conference of the Oregon and Washington highway commissions will take place soon, according to Richard Bettendorf, Astoria port manager.

He said it is quite possible that a new traffic survey will be made. He said he was sure an agreement could be worked out since both legislatures had instructed their highway departments to cooperate in planning construction of the span. Debate opened at about 10:12

a.m. on the floor of the House with introduction of the amended measure by Rep. Holmstrom.

Before the measure was approved it had to overcome a bid to send it back to committee launched by Rep. George Annala, of Hood River.

Rep. Annala maintained that adding the Highway 42 improvement plan would disrupt plans for improving Oregon roads on a regional basis.

The highway department divides that state into five major regions and appropriates money for construction and improvement on that basis.

Rep. Annala said that about a million dollars a year which would be spent on other projects would be lost through the bond issue for the two projects.

Rep. Holmstrom moved that the House concur in the Senate amendments and re-pass the bill. He said that both projects were urgently needed and that a bond issue was the only way to get them.

Holmstrom explained again that the Astoria bridge would not be built until Washington entered into contract with Oregon to share profits or losses from the proposed toll structure between Astoria and Megler, Wash.

Highway 42 is not mentioned directly in the bill, but Holmstrom said there was an agreement with the highway department that the money would be used for improving the road between Roseburg and Coquille.

Rep. Stafford Hansell (R-Umatilla) also spoke against the bill, arguing that the legislature should not direct highway commission activity, and he did not believe it was good financing to issue bonds.

Supporting Rep. Holmstrom on the floor was Rep. Clarence Barton (D-Coos). He argued in favor of the span and the Highway 42 project.

Rep. Annala moved that the House not concur and send the measure to a conference committee and in his arguments touched on the bridge project. Twice in this exchange Rep. Holmstrom admonished Rep. Annala that he was not authorized to speak against the bridge since the Highway 42 project was the object of his attempt to return the measure to committee.

In a final comment Rep. Annala urged his fellow legislators to support his efforts to send the bill to a joint committee because, "It's a lousy amendment."

Speaker of the House Robert Duncan (D-Jackson), upheld Rep. Holmstrom's arguments.

Rep. Jos Rogers (R-Polk), also argued against the Highway 42 amendment. Rep. Al Fiegall (D-Douglas), made the motion to bring Rep. Annala's proposal to a vote.

Vote to send the bill to a joint Senate and House conference committee was defeated with 18 voting for the move and 41 against.

Making the motion to end debate on the bonding bill was Rep. Robert Elstrom (R-Salem).

One representative, C. R. Hoyt, Benton county, who voted against the final bill, said on the floor of the House after the vote he favored the bridge, but voted against it because of the Highway 42 amendment.

Victory came at approximately 10:53 a.m. Of 60 Representatives, 44 voted for the bill, 15 against and one member was absent.

Gov. Hatfield had high praise for Rep. Holmstrom and State Senator Dan Thiel. Sen. Thiel had earlier successfully guided the measure through the Oregon state Senate with a vote of 24 to 4 with two absentees.



WILLIAM HOLMSTROM



DAN THIEL



RICHARD BETTENDORF



CHARLES DE FOE



The late Floyd Wright, former official of Columbia River Fishers association, and chairman of the Port of Astoria board of commissioners was one of the early backers of the trans-Columbia bridge plan. He revived the idea several years before his untimely death and was an ardent proponent of the project. It was largely through his efforts that the Port of Astoria and its resources took the lead in the official battle to bring the span to the Lower Columbia. Much of the credit for today's successful realization of the long dream of the area, must rest with him, backers of the span said today.

Governor Left Capital To Sign Astoria Bridge Bill

It took Gov. Mark Hatfield two tries, two years apart, to sign the Astoria bridge bill into law.

Hatfield, in a precedent-shattering move, came to Astoria May 3, 1959, to sign the \$24 million bridge bill. The ceremony took place in the circuit court room of the court house, the spot where Tudor Engineering company in April, 1955, released its report affirming that the bridge project was feasible.

Hatfield had previously told Sen. Dan Thiel and Rep. William Holmstrom that he considered the signing of the bridge legislation such a historic event in the lives of the people of Clatsop county and the Oregon coast that he would sign the bill here.

The threesome arrived a half hour late for the scheduled 6 p.m. ceremony after being delayed in Salem. They flew here from the capital in a plane piloted by Douglas Olds, who was then city school superintendent. Olds is now director of Tongue Point Job Corps Center.

Historic Move

Earlier, after checking the state archives, Holmstrom told The Daily Astorian that apparently this was to be the first time in Oregon history that a governor had signed a bill anywhere but in the state capital.

Hatfield used three pens to sign the bill, giving one each to Thiel, Holmstrom and Mrs. Floyd Wright, widow of the late port commission president. The late Floyd Wright, former official of Columbia River Packers Association, Inc., was one of the early backers of the bridge, and revived the idea several years before his untimely death.

Three weeks after the signing of the bill, about 500 persons turned out for a program and reception to celebrate the progress of the Astoria bridge campaign. Thiel, Holmstrom and Mrs. Wright each received a framed picture of the signing of the long-awaited legislation. State Sen. Walter Pearson was here to address the audience.



Thirty years of dreams came true April 27, 1961, as Gov. Mark Hatfield signed into law the bill authorizing the \$24 million Astoria bridge over the Columbia river. It was the final touch to authorization of the project. Washington state

had already concurred. Hatfield, flanked by Rep. William Holmstrom and Sen. Dan Thiel, key sponsors, used 12 pen in completing the signature and gave them to Astoria official on hand for the ceremony.

Celebration Premature

The celebration was premature.

The Washington legislature took no action at its 1959 session to authorize that state's part in the building of the huge span across the Columbia.

Legal authority was lacking in Washington for the state to share in the deficit financing

as required by the bonding act passed by the Oregon legislature.

This setback stunned bridge proponents, but they refused to give up the project now that the bridge was so close to reality. Two years later the legislatures of the two states met again.

The Washington House of Representatives approved the bridge bill March 8, 1961.

The Oregon Senate followed suit April 18. It was now up to Govs. Mark Hatfield and Albert Rosellini. Rosellini signed the Washington legislation in 1961. Hatfield, who

stayed in Salem this time, signed Oregon House Bill No. 1457, which authorized the sale of bonds for construction of the bridge. The date was April 27, 1961.

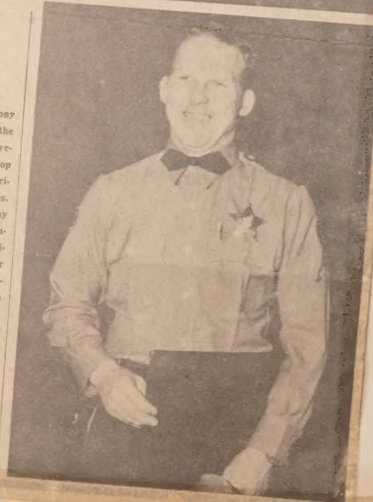
Then the celebration started all over again. This time it was for real.

Crowd Sees Historic Rites



Many Attend

Here are views of the ceremony accompanying signing of the Astoria bridge bill Monday evening in the court house. Top photo shows Gov. Hatfield's arrival at the court house steps. From left, County Judge Guy Boyington, Mayor Murry Steinbock, the governor, Vice-President R. C. Swalls of the chamber of commerce, and a Royal Chiswick drummer. Second photo shows the governor climbing the steps between rows of Royal Chiswicks, accompanied by Boyington, Steinbock and Swalls. Third photo shows Gov. Hatfield greeting Rep. William Holmstrom, who arrived late by plane with Sen. Dan Thiel. Bottom photo shows Officer Newell of the state police with the signed bill in his brief case. (A-B photos by Don Church)



DeLong Men at Work on Four Piers

Feb. 13, 1963



Work in progress on four piers of the Columbia river bridge is shown in this photo. In left foreground reinforcing steel is being placed for Pier 173. Across W. Marine Drive, in center, foundation piling for Pier 172 are being driven. Behind

forms for the first course of Pier 171, on the river shore, are visible. In the background is a four-posted barge, excavating a hole for footings of Pier 170, in the river, a short distance offshore.

First Pier For Bridge Up 16 Feet

Pier 171 of the Astoria bridge, first to rise above the ground, was up 16 feet this week and ready to go higher.

Pouring of concrete for the first 16 foot "rise" of the 100 foot pier was completed late last week. Forms were removed and hoisted higher for the next pouring of concrete, to be done probably next week. Concrete pouring is set tentatively for Tuesday.

DeLong corporation Thursday completed putting down a concrete test piling at the site of Pier 16, near the Washington shore, where load testing was being done Friday and was to be continued through Saturday.

DeLong corporation moved its newest barge, No. 160, from the site of Pier 16 to the site of Pier 170, just off the Astoria waterfront, this week and this barge with its big pile-driving rig was expected to start putting down piling for the pier foundation. A total 328 steel piling with average length of 85 feet will be driven into the river bottom near this pier.

The bridge pier contractors were driving piling this week for the foundation of Pier 172, just north of W. Marine Drive, and were ready to pour concrete for the base of Pier 173, just the other side of W. Marine drive, probably some time next week.

Another of the DeLong company's working platform barges was busy at the site of Pier 160, just north of the main ship channel, excavating holes for the pier footings.

Sidewalk Superintendents Oversee Bridge Pier Work

Feb. 23, 1963



Pier construction for the Astoria bridge, underway near W. Marine drive draws crowd of sidewalk superintendents. DeLong corporation crews are at work on a number of piers, both on land and in the river. (Daily Astorian Photos)

Big Floating Crane Used Here

2-24-63



What is claimed to be the world's largest floating crane is shown here, mounted on DeLong corporation's Barge No. 160. The big machine towers 190 feet in the air. The leg at right has a pile-driver of 300 tons capacity, which was being used to put down a test pile at the site of Astoria bridge Pier No. 16, near the Washington

shore, when this photo was taken. The cables at top left and the beams at bottom left, reaching out of the picture, are part of the rigging used to anchor the crane to its platform. At right rear can be seen a smaller crane of 150 tons capacity, mounted on DeLong's Barge 143.

Automation Plays Big Role In Manufacture Of Concrete For Bridges

Wednesday, February 20, 1963

★ ★ ★ ★

Tongue Pt. Plant To Supply Bridges; Makes 72,000 Yards

Automation is the thing in modern industry.

The manufacture of concrete for the Columbia river bridge, now in progress at Tongue Point, is a highly automated process. Electric power, not manpower, does most of the work.

The concrete plant occupies Pier 1 of the former naval station and an acre or two of adjacent land. It is operated by the Nickols Brothers, from Soap Lake, Wash., who have a similar plant turning out concrete for Round Butte dam on the Deschutes river.

Lou Nickols, one of the brothers, is running the Tongue Point plant and Warren, his brother, is running the one at Round Butte dam. The firm is maintaining its headquarters currently at Madras, near Round Butte dam site.

The Tongue Point plant will turn out 68,000 cubic yards of concrete for the Astoria bridge and another 8,000 cubic yards for the new Highway 101 bridge across Lower Youngs Bay, for a total of 72,000 cubic yards to be manufactured here.

This total is more than the firm is turning out for Round Butte dam, which will require 65,000 cubic yards.

Concrete Mixed, Trucked

Right now the Tongue Point plant is just getting started on its work. Concrete is being mixed there and trucked to west Astoria for piers being built on the Astoria shore.

Preparations are underway, however, for construction of the concrete shells which will be the supports for many of the piers to be built in mid-river. There will be hollow concrete cylinders of varying diameters and heights, each with a flaring conical base that will rest on footings on the river bottom. A pier will consist of a pair of these shells, side by side. Concrete for these shells will be mixed at the Tongue Point plant and the shells will be cast on barges moored alongside the pier there, to be towed to the pier sites and put into position by the four-legged barges the DeLong corporation has had built for the bridge job.

Forms for these shells are being readied now.

Will Mix At Site

The portion of each pier above the river surface will be concrete towers supported by the submerged shells. Concrete for the upper part of each pier will be mixed at the pier site and poured into place there.

For this purpose, the Tongue Point plant will "batch out" 48,000 cubic yards of material in rubber

"roto-bags." Each bag has two compartments, one for the aggregate and one for the cement needed to mix 1.5 cubic yards of concrete.

These bags will be loaded automatically at Tongue Point. They will be on barges moored to dolphins beside the pier, and will be loaded by a conveyor belt carrying automatically-regulated quantities of the necessary materials.

The bags full of pre-measured quantities of aggregate and cement will be towed to the pier site, where a mixing plant on a barge will add water, mix the material and pour it.

Three sizes of rock, sand, cement and water are mixed to make concrete.

Material for the bridge concrete is being supplied by Pacific Building Materials, Portland. Rock is being taken from the Willamette river a short distance south of Portland.

The material is barged to Tongue Point and unloaded by conveyor belt into three piles of rock, each of uniform size, and a pile of sand.

Cement, barged in from Portland 5000 barrels at a time, goes into a steel silo beside the mixing tower.

The pile of rock and sand are in a row. Under them runs a tunnel 270 feet long. In its roof, under each pile, is a gate controlled by electric power. A conveyor belt runs through the tunnel.

As the material emerges from the end of the tunnel it falls on to another conveyor belt, which runs up an incline and dumps the material into elevated bins, above the mixing bin.

"Sensor" Gives Signal

There is one bin for each kind of rock and one for sand. Each bin has near its bottom an electronic "sensor." As material is drawn off from each bin for mixing concrete, the "sensor" transmits a signal when the level of the material drops below a certain point. This opens the gate in the tunnel under the pile of this particular material, permitting the needed quantity for filling the bin to fall on the conveyor belt and be carried to the bin.

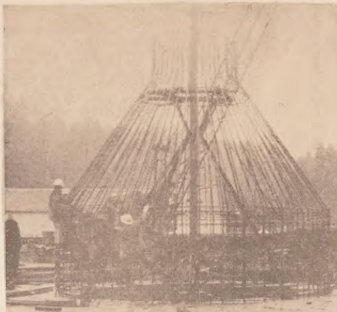
An operator in the control tower regulates, with levers and push buttons and a scale for weighing, the right quantities to be dropped from each bin into the mixing chamber below them. As this is mixed it is carried by a conveyor belt to the waiting truck beside the tower or—by reversing the conveyor belt—to the roto-bags waiting on a barge on the other side.

Plant to Supply Concrete for Piers



Here is the cement plant at Tongue Point which will supply concrete for the Columbia River bridge piers. At lower left is the bottom edge of a pile of mixed rock and sand. A conveyor belt running through a tunnel under this pile carries the material to a conveyor belt running up the long incline at right. The mixture is dumped

into the mixing tank at right background. Dry cement is contained in the big silo at left. It runs through a pipe into the mixing tank, where water is added and the concrete is mixed, to be trucked or barged to the bridge site. Hundreds of tons of concrete will be used in building piers.



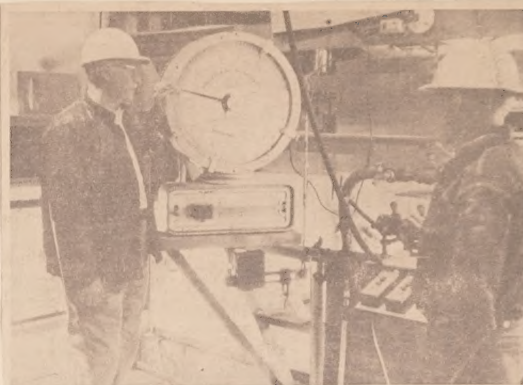
Workmen here are putting together reinforcing steel for a concrete pier shell for the Astoria bridge. The photo indicates the shape of each shell. The shells will be of varying sizes.



This conical structure shows a partly-assembled form for the interior wall of the conical base of one of the Astoria bridge pier shells. The forms are of steel and can be quickly taken down and reassembled for the next casting. Corrections are for extra strength.



Here is a pile of the roto-bags which will be used to haul pre-measured quantities of cement and aggregate for mixing concrete at pier sites.

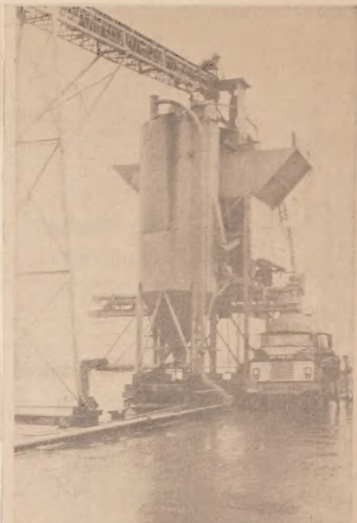


These men are mixing a batch of concrete. Arthur Scott, right, operates levers and buttons which drop correct amounts of three kinds of rock and of sand from bins into a mixing chamber.



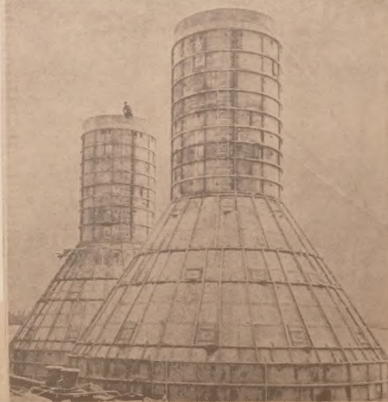
Workmen on the outermost barge here are building a platform that will be used to mount the forms for casting concrete pier shells for the

Columbia river bridge. The barge at left is unloading steel I-beams for use by DeLong corporation in foundation piling for bridge piers.



This structure is where concrete is mixed. It stands on Pier 1 at Tongue Point. At top left is the conveyor belt which carries rock and sand to bins in the funnel-shaped compartment below it. The cylinder in foreground contains cement. The operator in a house behind the bins operates gates which drop the needed amounts of each material to mix a batch of concrete. Cement is forced in from the storage silo by a screw arrangement. The mixture is carried by a conveyor to the waiting truck beside the tower. By reversing the conveyor, materials for the concrete can be carried to barges on barges moored beside the pier. This end of the conveyor can be seen projecting at left.

CONCRETE FORMS for shell piers used on both ends of bridge look like some weird space capsule from another world. Piers are precast in Tongue Point area and then barged to bridge site.



Crews at Work Preparing for Bridge Job



Here is the route which the approach of the Astoria-Point Ellice bridge will follow through the Astoria West End business district. Looking north, the photo shows the cleared area where buildings

have been removed, and shows linemen clearing wires, workmen removing rubble, and other preparations. DeLong Corporation is expected to start work next week.



Here is general view of the site of the Astoria approach to the trans-Columbia bridge, showing DeLong Corporation barge in river. Picture, looking north, shows Washington shore in background. In foreground is Sueni hall and cleared areas where buildings were razed to make room for bridge piers. Construction work on the piers will start soon. (Daily Astorian Photo)

DeLong Constructing Forms for Pier Base

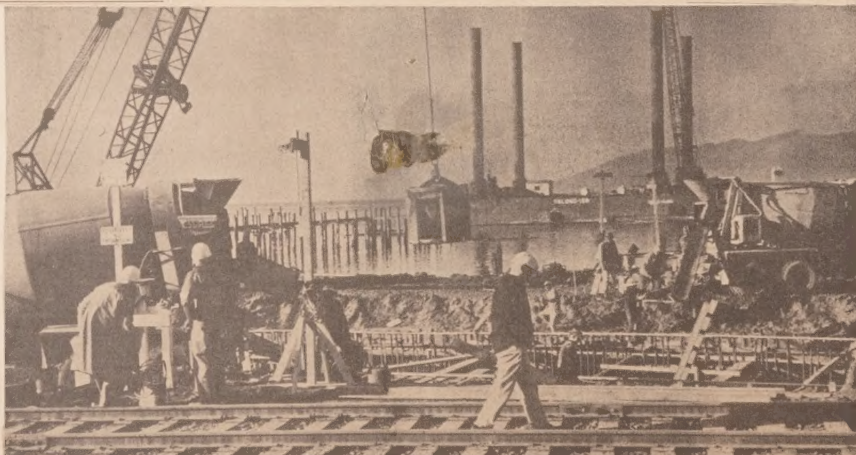
Friday, December 14, 1962



DeLong Corporation has begun construction of forms for a six-foot thick concrete slab to form the base for Pier 171 of the Astoria bridge, on the north side of W. Marine Drive. Steel piling, reinforced by an outer wooden shell to prevent caving in, will provide the form inside which the slab will be poured. The work has begun and a piledriver is shown putting down posts for the forms.

First Concrete Poured for Astoria Bridge

Saturday, January 26, 1963



DeLong corporation poured the first concrete for the Astoria bridge Friday, constructing footing slabs for Pier 171 on the Astoria shore. Concrete was trucked from the company's concrete plant at Tongue

Point by trucks shuttling all day long. Two of the trucks are shown here pouring concrete into the pit. Forms can be seen lining sides of the holes where the footings rest.

DeLong Speeds Up Pier Construction Pace

December 26, 1962



"Clamshell" digging operations from barge in rear will be placed on a three-shift 24 hour a day basis starting Thursday as DeLong workmen continue pier-building operations for the Astoria bridge. Digger is excavating for foundation for

Pier 170, largest and highest of 32 bridge piers DeLong will construct. In foreground, foundation piling for Pier 171 are being driven. A total of 125 pilings will be placed. (Photo by Daily Astorian)

First DeLong Barge Arrives

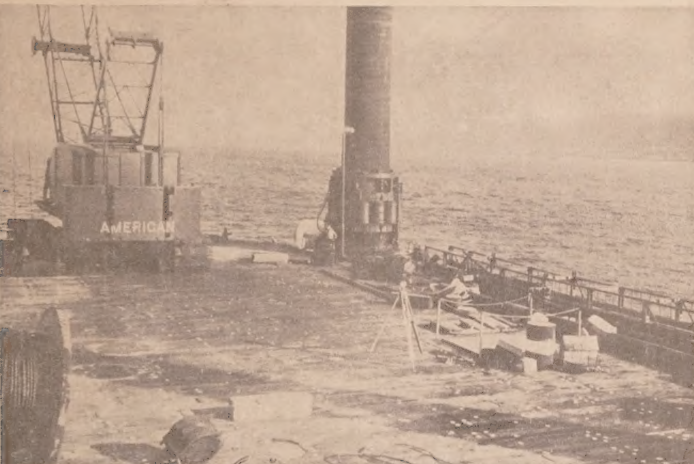
The DeLong Corporation brought the first of the big barges it will use in construction of the Astoria bridge down the river from Portland Sunday and moored it on the north side of the river channel opposite the bridge terminal site in West Astoria.

Ralph Hannan, project superintendent here for DeLong, said Monday the barge will go to work

(Continued on Page 2)

Astoria, Oregon, Tuesday, November 6, 1962

Much Equipment Found on Board DeLong Barge



Here's what it looks like on board the barge the DeLong Corporation brought from Portland last weekend for use in constructing the Columbia river bridge. At left is a crane, which operates a clamshell digger for scooping out level places on the river bottom as bases for bridge piers. The crane also will be used for pile driving purposes. In center of photo is one of the four corner posts, surrounded by the jack which pulls the barge up and down.

Center of the barge is a working platform. In foreground, out of sight, are three compressors which provide air to operate the jacks. The barge was moved Tuesday to the site of bridge pier No. 156, north of the main ship channel, where test piling will be put down to test amount of scouring around piling and pier bases that the current of the river will cause. More barge pictures are on Pages 3, 4 and 10.

Astoria, Oregon, Wednesday, January 16, 1963

Two Barges Excavating for Pier Footings



DeLong corporation's two big four-posted barges were working side by side this week at the site of Pier 170, 800 feet off the West Astoria waterfront. They are digging two holes in the river bottom, each 68.5 by 45 feet and about 30 feet deep, for footings for the pier. Material is moved out of the hole by one barge, then moved farther inshore by the other. Diggers mounted on each barge do the handling of material. Material is moved well inshore to make way for

another barge which will post itself on the south side of the two holes to drive foundation piling in each hole. DeLong corporation hopes next week to begin pouring footings for Pier 171, on shore, as soon as 29 additional concrete foundation pilings are driven below the pier site. The company's concrete plant at Tongue Point was to be put into full operation this week.

West's Biggest Floating Work Barge Heads For Astoria-Megler Bridge Job

By LAWRENCE BARBER

The largest floating working platform of its kind on the Pacific Coast, DeLong No. 160, was towed down the Columbia River from Portland Friday for use in construction of the Columbia River bridge between Astoria and Point Ellice.

The barge-like structure is 160 feet long, 80 feet wide, and 14 feet deep, with steel legs towering 160 feet into the air and a 500-ton capacity shearleg crane rising more

than 175 feet above the deck.

The barge was built for DeLong Corporation, contractor for the principal bridge piers, by Albina Engine & Machine Works, Inc., and the caisson legs, six feet in diameter, were built by Willamette Iron & Steel Co. Pacific Inland Navigation Company's tug Keith took the barge down the river.

Legs To Be Lowered

At Astoria, the barge will join a smaller sister, DeLong 159, which is 140 feet long and 80 feet wide, and which was built by Albina last fall. Like the smaller barge, the big one will be used for excavating for pier foundations and driving steel piling into the bottom of the river for the piers to rest upon. Later it will be used for pouring the foundations and raising steel toward the roadway.

The barge will be floated to any desired location, and the legs at the corners will be lowered by means of jacks into the river bottom. The barge will be raised on the legs to any height desired. After the barge has been at Astoria for a time, each leg will be lengthened by the addition of 70-foot sections at the tops, giving the legs a total length of 230 feet.

The barge and legs were designed by DeLong Corp., the originator of the Texas tower type of construction, of which these are a modification. DeLong air jacks were

installed to raise and lower the legs, and heavy duty air compressors were installed to provide the air pressure. Special DeLong-designed tanks in the hull store the air for use in the jacks and for other purposes. Three compressors produce air pressure of 125 pounds per square inch, and one booster pushes it up to 350 pounds per square inch.

The American Hoist and Derrick Co. crane is mounted on deck tracks which permit it to move lengthwise and sideways on the deck by means of a hydraulic jacking system. The boom of the crane is 175 feet long and can be extended even farther. A pile driver lead 160 feet long hangs from the end of the boom and it contains an inner section which can be extended another 160 feet for guiding the pile driving air hammer.

Test Piles First

First work for DeLong 160 will be to drive some test piles for pier 16, near the Washington shore, where DeLong 159 now is working. DeLong 160 then will be returned to the Astoria shore where it will put down 528 steel bearing piles for the main pier next to the shore. These piles will be 95 to 99 feet long.

DeLong 159 had been used to dig two holes in the river bottom, each 35 feet deep and 65 feet wide by 108 feet long. After the bearing pilings are driven, concrete slabs will be poured in each hole as footings for the pier.

DeLong Corp., which holds a \$7,868,000 contract from the Oregon highway department, is pouring concrete for other piers both on shore and in the water.



UNGAINLY MONSTER is this huge DeLong floating work platform for use in building Astoria Columbia River bridge. It was towed down the river from Portland Friday. Legs at corners are 160 feet long.

can be driven into river bottom to lift platform high over water. Shearleg crane on deck has 175-foot boom and 160-foot pile driving guide.

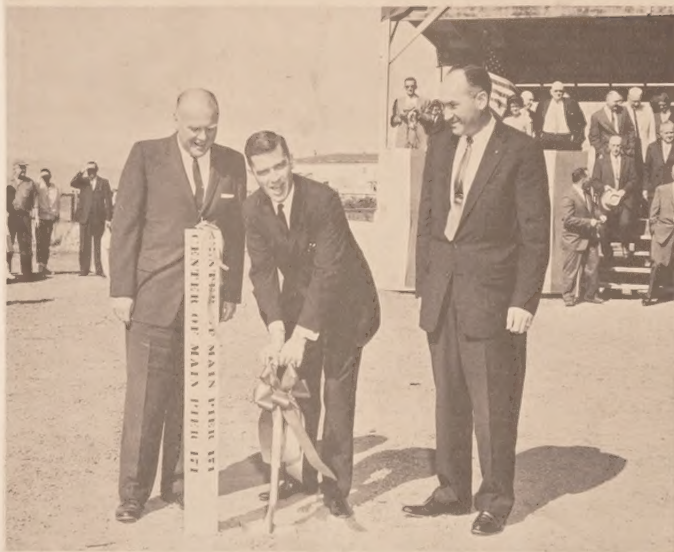


Astorian let loose April 18, 1961, following word that the Astoria-Megler bridge bill had cleared its final hurdle with 26-1 approval by the senate. Citizens paraded through downtown Astoria and built a celebration bonfire that evening. Also jubilant were backers of the bridge project in Salem. Making "V for victory" sign (top photo) are from left Sen.

Dan Thiel; Robert Holmes, former governor and ex-Astorian; Rep. William Holmstrom; Richard Bettendorf, Port of Astoria manager, and Norris Johnson, chamber of commerce manager. Bottom photo shows the scene in downtown Astoria soon after passage of the bill was announced. Snake dancers were led by Mayor Harry Steinbock.



Ceremonies Marked Bridge Ground Breaking



Gov. Mark Hatfield, flanked by Rep. William Holmstrom, left, and Sen. Dan Thiel, use a golden shovel to break ground officially for the first pier of the Astoria bridge on August 11, 1962. It was the beginning of a \$24 million project just com-

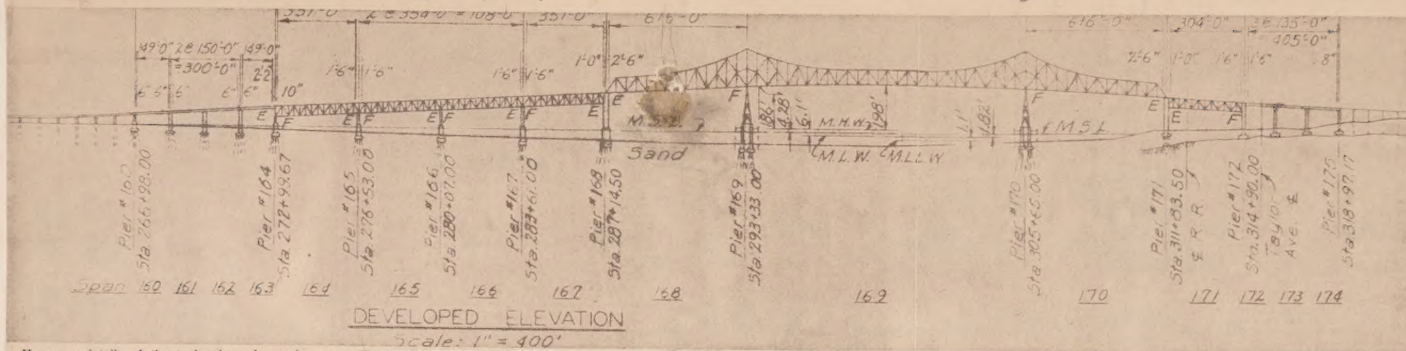
pleted. Bottom photo shows the governor being greeted by Astoria old timer George Hobson, who provided an unexpected share in the ground-breaking ceremonies. (Oregon Highway Department Photos)



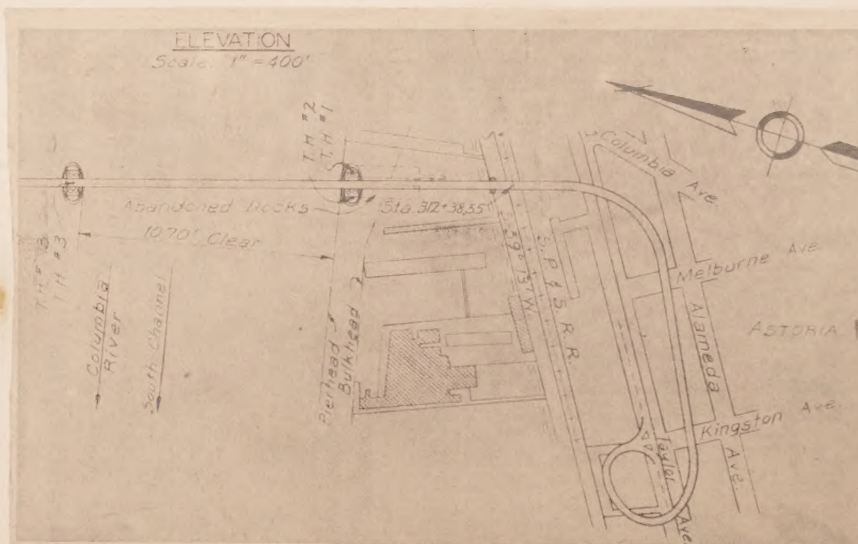
GROUND BREAKING CEREMONIES OF THE ASTORIA BRIDGE AUGUST 11, 1962

LEFT TO RIGHT
OREGON STATE SENATOR, DAN THIEL
OREGON GOVERNOR, MARK HATFIELD
REPRESENTING THE STATE OF WASHINGTON, C. E. COWELL
OREGON REPRESENTATIVE, WILLIAM HOLMSTROM
MAYOR OF ASTORIA, HARRY STEINBOCK

Highway Department Sketches Show Plans for Bridge



Here are details of the main channel crossing construction of the new trans-Columbia bridge, as taken from Oregon Highway Department sketches. At left the bridge rises from the viaduct across Desdemona sands, and is carried upward by four steel girder spans, then four steel deck trusses. Above the channel are through trusses, 616 feet, 1232 feet and 616 feet. The roadway is then carried down to the south approach by another single deck truss and a series of box girders, and the approach curves westward.



Above is a State Highway Department sketch showing location of the proposed approach to the Columbia River bridge, on which the department conducted a public hearing here Wednesday afternoon. The sketch also shows location of piers carrying

the span across the main Columbia River channel. The approach will force relocation of between 28 and 36 buildings, including stores and homes.

Government Spokesmen Give OK

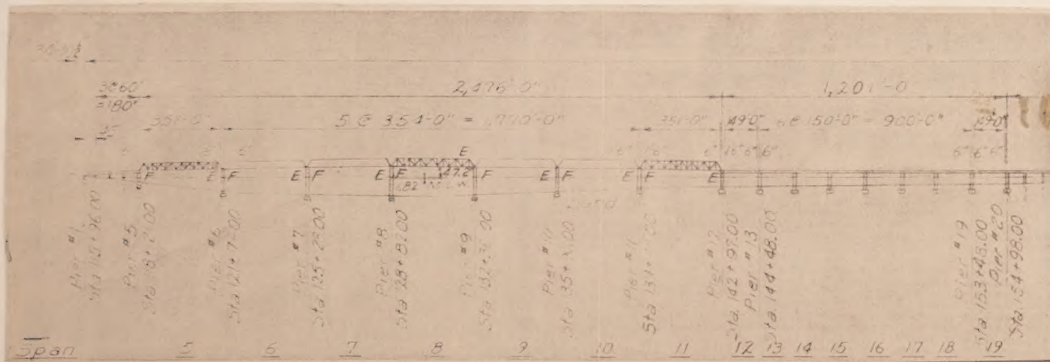
Oregon Highway Department's plans for the south approach of the trans-Columbia bridge won hearty local approval at a public hearing conducted by the department in city hall here Wednesday afternoon.

Spokesmen for the city, county and port governments and for the Chamber of Commerce all endorsed the project.

No private individual filed objection, despite the fact the wide-swinging bridge approach will dislocate from 28 to 36 buildings as it slashes a swathe right through the West End district.

Spokesmen for local agencies who endorsed the project included Mayor Harry Steinbock of Astoria, County Commissioner, Port Commissioner Verne Stratton, Port Commissioner William Marion and President Forrest Vaughn of the Chamber of Commerce.

Only changes requested in the highway department's plans involved a relocation of Kingston street, and parking restrictions proposed for the north side of West Marine drive.

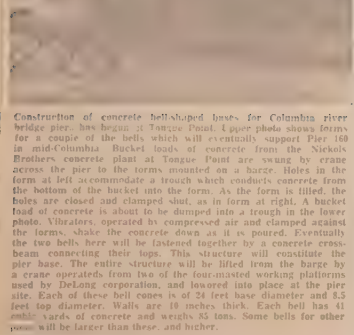


The above drawing shows construction details of the north channel crossing section of the trans-Columbia

bridge. There are seven through trusses, each 350 feet long, supported on piers. At right the trestle crossing

Desdemona Sands is shown. The drawing was taken from Oregon Highway Department plans.

Bases for Bridge Piers Under Construction



Construction of concrete bell-shaped bases for Columbia river bridge pier, has begun at Tongue Point. Upper photo shows forms for a couple of the bells which will eventually support Pier 160 in mid-Columbia. Bucket loads of concrete from the Nickols Brothers concrete plant at Tongue Point are swung by crane across the pier in the forms mounted on a barge. Holes in the form at left accommodate a trough which conducts concrete from the bottom of the bucket into the form. As the form is filled, the holes are closed and clamped shut, as in form at right. A bucket load of concrete is about to be dumped into a trough in the lower photo. Vibrators, operated by compressed air and clamped against the forms, shake the concrete down as it is poured. Eventually the two bells here will be fastened together by a concrete cross-beam connecting their tops. This structure will constitute the pier base. The entire structure will be lifted from the barge by a crane operated from two of the four-masted working platforms used by DeLong corporation, and lowered into place at the pier site. Each of these bell cones is of 24 feet base diameter and 15 feet top diameter. Walls are 10 inches thick. Each bell has 41 cubic yards of concrete and weighs 35 tons. Some bells for other piers will be larger than these, and higher.

Concrete Shells Form Bases for Piers



Here are two of the completed concrete shells which will be used as bases for many of the Astoria bridge piers. Scores of these shells will be turned out at the concrete plant of Tongue

Point before the bridge pier construction is finished. Two shells placed on the river bottom and filled with concrete will constitute a pier.



The piles of rock shown here are material for the Nickols Brothers concrete plant at Tongue Point. The concrete for the Astoria bridge piers will be made here. A conveyor belt and sand barges by means of a

conveyor belt on the derrier arm, a tunnel runs under the raw of piles of material, emerging at the left out of the picture. It carries material to a 100 ft. pile of material.



Here is the end of the tunnel which brings rock and sand to the Tongue Point concrete plant. Lou Nickols, who has the contract to supply concrete for the Astoria and Youngs Bay bridges, leans against the tunnel outlet. At right is the

lower end of an inclined conveyor belt which carries material up to the mixing plant. End of the belt which brings material from the stock piles above the tunnel can be seen, emerging from the tunnel.

Astoria, Oregon, Saturday, March 23, 1963

Pier Looms Higher Each Week



Pier 171 of the Astoria bridge towers several feet higher each week and looms high now over the West Astoria business district. The pier is now up more than 80 feet, rising 15 feet as each "lift" of concrete is poured. Eventually it will be 106 feet high. Workmen on scaffold are pre-

paring to lower the form timbers below them, preparatory to raising the tower another "lift" above the form-cased concrete still drying on top. Reinforcing steel for the next lift looms above. Crane in foreground is used to move form materials.

The Daily Astorian, Astoria, Oregon, Monday, May 27, 1963

Steel Cofferdam Gets Concrete Seal



The cofferdam is being sealed at the bottom of a steel cofferdam, an excavation in water, on the Astoria bridge. At left in top photo is a barge loaded with sacks of dry concrete aggregate and cement. On the one-posted barge next to it is a crane and a turbine-type concrete mixing plant. The rig at far left hoists sacks of concrete material, two at a time, and dumps them into the mixing plant. Next right is a four-posted barge with a crane and a bucket. This bucket carries mixed concrete from the mixing

cofferdam. A 12 1/2-foot thick seal has been put down on the bottom of the cofferdam this week. Lower photo shows loading of the bag rubber into the cofferdam. A crane is hoisting a load of filled sacks at left. Each bag holds material for 1.5 cubic yards of concrete. It requires 2,000 cubic yards to make the cofferdam seal, or about 1,000 bags full of material.

More Concrete Goes Into Bridge Pier

3-1-63

Pier 172's Footing Constructed

DeLong corporation was pouring 500 cubic yards of concrete into a hole just north of West Marine drive Friday to constitute the footing of Pier 172 of the Astoria bridge.

The concrete was being trucked from the Nickols Brothers concrete plant at Tongue Point. A crane mounted on tractor wheels was being used to lift the material from truck to footing.

DeLong workmen were also putting up forms for the third "lift" of Pier 171, on the shore north of W. Marine Drive. Two lifts, one of 10 and one of 16 feet, have already been put in place. The pier will eventually be 106 feet high.

At the site of Pier 16, near the Washington shore, successful driving of a concrete test piling and loading of the piling were completed this week. The tests showed calculations by Oregon highway engineers on the bearing strength of piling driven into the river sands there were correct, according to Bob Ellison, resident highway engineer in charge of the bridge.

Excavation of a hole for footings of Pier 169, just north of the Columbia river main channel, began this week. At pier 170 just off the Astoria waterfront, driving of 328 foundation piling continued.



Five hundred cubic yards of concrete were poured into the footings of Pier 172 of the Astoria bridge Friday. The concrete truck in center of picture is dumping concrete mix from the Tongue Point concrete plant into a bucket which

will hold the mix to the right spot in the foundation. In upper left corner Pier 171 can be seen. This is the first bridge pier to rise above the ground. Forms are being placed for the third "lift" of the 106-foot pier.

Steel Framework to Support Cofferdam Piling



The steel framework on the barge here is one of three sections of the frame for a sheet piling cofferdam to be built around the site of Pier 170 of the Astoria bridge. One section of the frame was lowered into position late Tuesday and the other two were to

be put down before the weekend. The full three-section frame will be 65 by 85.5 feet and will support the steel piling of the cofferdam when water eventually is pumped out. This pier will support the south end of the main channel crossing span of the bridge.



Here is Pier 170 of the Astoria bridge, where preparations to build a box girder tying together the four posts of the foundation are in progress. Four cylinders of reinforcing steel shown in the picture are the tops of these posts which will be

joined by the box girder. This girder will rise 25 feet above the water level. The steel towers of the pier will rise above this girder. Each of the four foundation posts will support a steel tower.

Log Tie-Up May Slow Bridge Work

Preparations to lower the first pair of concrete bells of the kind which will support several of the river piers of the Astoria bridge were in progress Friday.

Two of the DeLong Corporation's four-posted barges or working platforms, in position at the site of Pier 160, had their platforms jack-

ed up, ready to lower the two bells into position on the river bottom. The two big bells will probably be put down early next week.

Long engineers said, The bells have been constructed at the Tongue Point concrete plant. The two bells, on a barge, will be towed into place between the

two platforms, hoisted up by a crane between the platforms, and lowered to the river bottom by jacking down on working platforms. The bells, which are hollow, will eventually be filled with concrete to be mixed at the site.

Pier 160, on the southern edge of Desdemona Sands, is the first

of a series that will lift the bridge southward from the Desdemona Sands trestle to the 196-foot high crossing of the main Columbia River channel.

The two bells that will support this pier are each 26 feet in base diameter and about 22 feet high. They will be entirely under water and the pier will be supported by them.

DeLong Corporation also has begun construction of timber falsework to support forms for the bridge deck between Piers 172 and 173. The DeLong pier contract also includes building the deck between these piers. No 172 is just north of W. Marine Drive and 173 is around the curve to the west over which the bridge will descend from the river crossing to the Astoria approach.

DeLong officials said the labor dispute which has halted Crown-Zellerbach operations in this area has choked off the supply of timbers for the falsework and that this part of the company's contract may have to be delayed if needed timbers cannot be obtained from other sources.

In building falsework between Pier 172, just north of W. Marine Drive, and Pier 173 just south of it, the contractors will leave a 28-foot gap for traffic on W. Marine. This gap will be bridged at the top by steel struts connecting falsework on each side, and carrying the forms for the concrete deck.

All falsework from Pier 172 to Pier 173 must be in place before the concrete deck can be poured. DeLong officials said.

Concrete work on Pier 171, Pier 172 and Pier 173 has been completed. Pier 174 is nearly finished and Pier 175 will be finished in a couple of weeks.

At Pier 176, just north of the Astoria shore, one of two steel cofferdams for the foundations has been pumped dry and pumping of

water from the other one will start Monday.

Concrete foundations for the tall pier, south support of the main channel crossing span, will be built inside the two 45 by 80.2-foot cofferdams.

DeLong Corporation also has started work on the Washington shore, where its concrete includes construction of the piers that will carry the bridge across the north channel. Piling for the foundation of Pier 7 were being put down this week.

Company officials said that fenders will be erected around the base of the falsework abutting into W. Marine Drive, to reduce the danger of accident from traffic going through the 28-foot bottleneck there.

The falsework will be removed as soon as the deck is poured and the concrete has hardened. DeLong Corporation has about 145 men at work now, officials said.



Timber falsework to support forms for the deck of the Astoria bridge can be seen here beside Pier 172, at left, on the north side of West Marine Drive. Pier 173 is at right. The DeLong corporation will build falsework from Pier 172 all the way around to Pier 175 in order to con-

struct the bridge deck, but is finding timber hard to get because of the labor dispute that has halted Crown-Zellerbach operations in this area. A 28-foot passageway for traffic will be left, with fenders to protect the falsework on each side of the gap.



False work construction between Piers 172 and 173 of the Astoria bridge is progressing, as shown here. The labor work will support con-

struction of the bridge deck. A 28-foot gap for traffic will be left.

Concrete Poured for Box Girder of Bridge

will be placed on top of each trio of piles, to complete the bent and carry the roadway. At right is the piledriver, with a barge containing more of the hollow 48-inch reinforced concrete piles.

Workmen Busy Atop Shoreside Bridge Piers

Wednesday, October 16, 19

The contractor has had men at work on the levee, cutting ridges and leveling the top east of the levee to make the taxmen.

Shells in Place

The company has completed placing concrete pier foundation shells at Piers 160-164 inclusive between Desdemona Sands and the main ship channel, and is preparing to put down the pier shells and caps for Pier 165 in the same area.

False work has been completed on the approach to the W. side of the bridge. The construction of the box girder that will surround these piers.

This box girder consists of two parallel, horizontal slabs of concrete, each six inches thick. The lower slab has four vertical concrete "stems" which support the upper slab, making the whole construction like a long box.

Part of the lower slab already has been poured. The upper slab will eventually constitute the road.

To Pour Top Slab
The completed bottom slab will be 6 inches thick by 24 feet wide. The upper one

At Pier 170, on the south side of the main channel, DeLong Corpor-

slab of the foundation. This will be a box-like concrete structure that will tie together the four foundation columns now protruding above water. The top slab will rise

to 25 feet above water level. It will support the steel tower of the main channel crossing pier, to be built by American Bridge Division of US Steel Corporation, which has the steel work contract for the bridge. Construction of Pier 169

north of the channel, will be like that of Pier 170. These two piers will be the bridge's tallest and will carry the bridge to 198 feet above the ship channel.

Here are two photos showing progress of construction on the shore-side portion of the Columbia river bridge. Pier 171 is the single structure standing by itself. The photo shows wooden forms for the

box girder that will surmount Piers 172 to 175. Pouring of concrete for this structure was in progress this week between Piers 172 and 173, which straddle West Marine Drive.

What's happening up on top of those City Schoolhouse towers is the Astoria bridge, where workmen have been busy for several weeks. Here is a photo showing, pointing to the right, the box girder that will support Piers 12 and 13, carrying the Astoria bridge roadway over the West Astoria business district.

The upper slab will be the roadway of the bridge approach.

Tide Tilts Barge, Steel Piling Lost

DeLong Corporation has begun salvaging the 200 steel H-beams that fell into the Columbia river just north of the ship channel Monday.

The company is using two of its four-posted working platforms. Each crane has a lifting truss which is lowered to the river bottom where divers fasten the truss to a beam for hoisting it out.

Company officials said one large mass of beams still seems to be resting in orderly fashion, and that saving these beams will be fairly simple. Other beams are jumbled "like a pile of chopsticks" and picking them out will be harder.

DeLong officials hope to recover most of the beams eventually, but it will be slow work.

DeLong of foundation piling for Pier 109 of the Astoria bridge, on the north side of the main channel will resume some time next week. This work was stopped when the H-beams for piling fell into the river Monday.

Concrete Poured

Pouring of concrete inside the cofferdams at Pier 170, south of the ship channel continued this week. The footing inside the downstream cell of the cofferdam is nearly finished and the cofferdam will be flooded in a day or so.

Building Footings

At Pier 170, on the south side of the main channel, construction of two concrete footings, each consisting of two concrete shafts to be connected by concrete box girders, was still under way this week. One shaft is already up above water level. The first footing of concrete will go to a point 25 feet above the river level, with steel structure to be erected on top of that.

Concrete shells for the footing of Pier 162, near Desdemona Sands, were being poured at the same time.

Contractor Begins Salvaging Steel H-Beams from Columbia

DeLong Corporation has begun salvaging the 200 steel H-beams that fell into the Columbia river just north of the ship channel Monday.

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Concrete Poured

Pouring of concrete inside the cofferdams at Pier 170, south of the ship channel continued this week. The footing inside the downstream cell of the cofferdam is nearly finished and the cofferdam will be flooded in a day or so.

DeLong Recovers H-Beams, First Pile Driven For Trestle

DeLong corporation has recovered all of the 200 steel H-beams which were dumped into the Columbia river recently when the tide tipped a barge.

Bob McKown, field engineer for DeLong, said the beams were taken to Tongue Point to be surveyed by highway department engineers to determine how many are still usable.

"Some of the concrete beams are junk," he said.

The company used two of its four-posted working platforms to salvage the beams. A lifting truss from each crane was lowered to the bottom where divers fastened the trusses to beams to hoist them out.

DeLong crews are now driving support piling for Pier 169, one of the big piers which will carry the Astoria bridge across the main ship channel. Concrete for the other big pier, No. 170, has been poured to four feet above sea level. McKown said coffer dams are being removed at Pier 170 and one of them will be reinstated at the upstream side of Pier 169.

Concrete Poured

Tuesday DeLong crews were treme concrete at Pier 169, one of the piers being built by DeLong at the Desdemona

Sands end of the job. Tremie concrete is poured under water through a pipe to fill the interior of the concrete cell which forms the base of the pier. Wednesday tremie concrete was to be poured at Pier 161, on the Astoria side of Pier 169, where the first pile was driven.

McKown said casting of the concrete bells and caps for them was continuing at the Tongue Point cement plant.

On shore, falsework is going up for the box girders on West Marine Drive. This falsework will support three spans of concrete decking to be constructed by DeLong between piers. This decking will form a portion of the highway roadway between the Astoria bridge approach and the steel decking to be constructed by American Bridge Division of U.S. Steel.

Robert Cunningham of the state highway engineer crew here said American Bridge division is scheduled to start piling steel in Portland in late October and plans to start work here in November. He said this schedule conforms to the firm's contract for building the highway superstructure of the bridge.

Test Piling Driven

J. H. Pomeroy and company and

DeLong Progressing on Pier Job

Trestle Contractors Gathering Equipment To Start Work Soon

Contractors who will build the 2.2 mile trestle carrying the Astoria bridge across Desdemona Sands are assembling equipment preparatory to starting work about August 1.

The contractors are J. H. Pomeroy and Company and Ben C. Gerwick, Inc., of San Francisco. Two independent firms who undertook the job as a joint venture and won the contract with a low bid of around \$4.3 million.

The contractors have brought in one barge from San Francisco, which will carry the equipment to drive jets of water into the river bottom to put down the concrete piles of the trestle bents, and a second barge with piling-driving equipment was expected to arrive Tuesday.

Open Office

The contractors have also opened an office in the old White Star cannery at the foot of 3rd street, where Richard Vlach of San Francisco has arrived to superintend the job.

The contractors have until March 31, 1962, to complete their work, but have expressed hope of finishing it by the end of 1961.

The job is expected to employ up to 100 men at peak periods. Local workers will be employed to the maximum extent possible.

Each bent for the trestle support will consist of three concrete piles, each 4 feet in diameter, driven into the river bottom. These bents will support a deck 27 feet above mean low water level.

To Have Barges Anchored

The contractors have notified the Coast Guard they will have barges and floating derricks with submerged anchor lines anchored in the Desdemona Sands area from about July 20 until March 1962.

Meanwhile the DeLong Corporation, which is building the pier for the rest of the bridge, continued this week to pour concrete inside steel cofferdams for the footings of Pier 170, at the south side of the Columbia River main channel, and to put down foundation piling at Pier 169, at the north side of the main channel, 1070 feet north of Pier 170.

DeLong Corporation also had a large work at the site of Pier 162, one of the series of piers carrying the bridge up from the Desdemona Sands trestle to the main channel crossing between Piers 169 and 170.

Divers Aid Pier Job

Work in progress at Pier 162 this week consisted of preparing bases for the concrete pre-cast pier shells that will be the piling footings. These bases consist of several pairs of piling put into the H beam, each with a section of H beam to support the bottom edge of the concrete shell. Divers are sent down to put the H-beams in place across each pair of piles.

Will Support Ascending Span

Concrete Footings In Place For Six Piers Of DeLong Job

DeLong Corporation, which placed the concrete shells for the footing of Astoria bridge Pier No. 169 this week now has these footings in place for six piers.

These are six of the nine piers that will support the bridge as it ascends southward from the Desdemona Sands trestle to the 195 foot high main channel crossing at Pier 169. The fourth pier for building these nine piers, plus the foundations for the two high piers supporting the main channel crossing, plus five piers on the Astoria shore, plus 16 on Blind channel crossing at the north end of the bridge—a total of 32.

The five piers on the Astoria shore are now complete, but the company also has the task of pouring the reinforced concrete box girder span from Pier 171 to Pier 175. False work to support this deck is partly in place and construction of forms and placing of reinforcing steel has been started on that portion of the deck which spans W. Marine Drive between Piers 172 and 173.

The work has not yet begun on the bridge, but has ended at the foundation piling for one of them.

The company has completed the concrete footings of Pier 170, the south pier of the main channel crossing, and is driving foundations piling at Pier 169, the fourth pier of the channel crossing.

A total of 528 steel piling are required for this pier, 264 of them for each of the two concrete footings. Construction of cofferdams inside which these footings will be poured will be under way by some time next week.

Each of the nine piers between the channel crossing and Desdemona Sands will consist of a footing of two concrete shells, rising just to the river surface, and joined there by a reinforced concrete cross-beam which will support two concrete towers that will carry the deck. Construction of the cross beams and towers will begin when the shells are in place for the footings of the nine piers.

Much Work Under Water

Eighty per cent of the work done so far by the DeLong corporation is under water and out of sight of the resident bridge engineer. Robert Ellison of the Oregon Highway Department has pointed out.

Meanwhile the Pomeroy and Gerwick contracting concern, which has the job of building the mile-long Desdemona Sands trestle, has successfully put down and tested a test piling at mid-sands and was putting down a second one on the north side of the sands this week.

As soon as this is done, the contractors will start putting in the 140 bents, or piers, that will support the trestle across the sands.

Each bent will consist of three concrete piling. They will be 80 feet apart, for a total distance of 11,200 feet or about 2.1 miles for the entire trestle.

August 29, 1963

Single Copies 10c

Concrete Shells Go Into Place on River Bottom



This photograph, taken at the site of Pier 164 of the Astoria bridge, shows the process of putting a couple of concrete shells into position on the river bottom as footings for a bridge pier. Tops of the shells project above the surface. They are being lowered into position by jacking down the vertical posts from which they hang. One of the jacks can be seen at top center of the photo. Also visible

are the beams running between the two shells. The company is using a derrick crane with a 75-ton capacity and a jet barge with large pumps and a jet pipe. The jet pipe, which carries water and air, blows a hole in the sand to start the piling downward, Vlach explained.

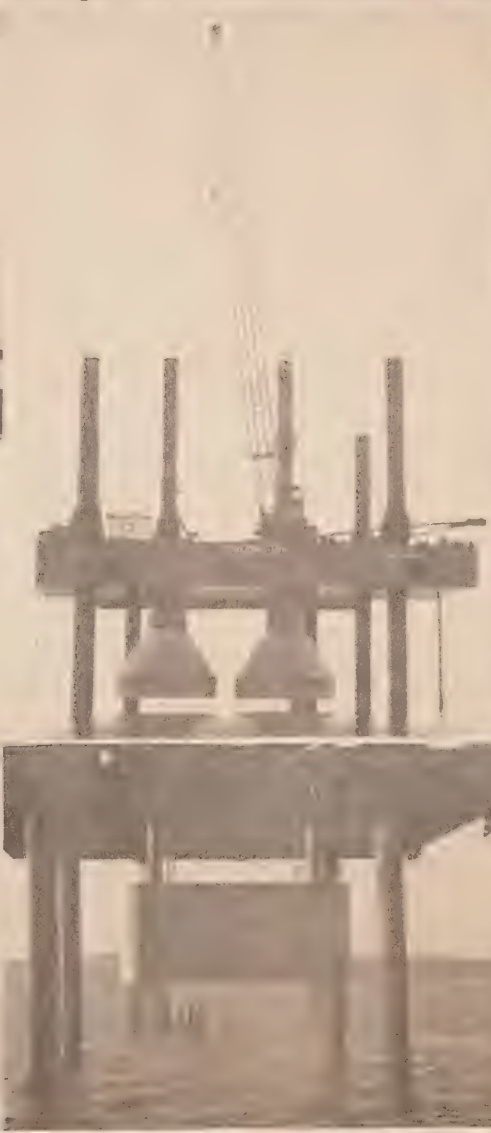
Box Tie-Beam Joins Concrete Footings of Pier 170



Upper photo shows construction of a box tie-beam joining the two big concrete footings of Pier 170 of the Astoria bridge over the Columbia. Lower photo shows the concrete mixer, on a barge moored alongside, which is turning out approximately 3,100 tons of concrete that go into this beam. It consists of a horizontal bottom slab with 1,000 tons of concrete in it, upright walls four feet thick and eight feet high and containing 1,100 tons of concrete including four round piers at each corner, and a top horizontal slab also of 1,000 tons of concrete. Pouring of concrete for the bottom slab has just been finished. Photo shows the maze of reinforcing steel for the upright walls. Steel for the south tower of the main channel crossing will rise from this beam. Construction of Pier 169, the other support of the main channel crossing, is still held up due to erosion problems. Barge loads of rock were being poured this week around the Pier 169 cofferdam to stabilize the sand that has been pumped into the eroded area around the cofferdam base.



Photos Show Stages in Construction of Bridge Piers Between Desdemona Sands, Main Channel Crossing



Photos on this page show stages in construction of the river piers that will support the Astoria bridge between Desdemona Sands and the main ship channel crossing. The photos were taken by Dan McPherson, Delong corporation engineer, and loaned to the Daily Astorian.

Top left photo shows two hollow concrete bells, each 42 feet in base diameter, 44 feet high and weighing 275 tons, being barged from the Tongue Point concrete plant to the pier site. Each has a metal "lifting spider" bolted to the top. Center left photo shows piers in position on barge between two of the DeLong barges, packed high above the water. The lifting girder between the barges has a lifting caisson and lifting jack above each bell. The bottom of the lifting caisson is attached to the lifting spider and each bell will be raised so the barge can be removed. Then each bell will be lowered to rest on the river bottom. Top center photo shows the two bells for Pier 164 being lowered.

After the bells are in position, resting on foundation piling driven into the river bottom, they are filled with concrete mixed on the site, to within 3 feet of their tops.

Then comes the process of putting a big concrete "cap" on top, linking the bells together. The center, top right and lower left hand photos show one of these caps being lowered into position. The caps are 15 feet high, 8 feet thick and 36 feet long. Steel rods protruding from top and bottom of the caps are reinforcing dowels. The lower dowels go down into the tops of the bells. Then concrete is poured into vertical holes running through each end of the cap, into the 8-foot gap that had been left when the bell was filled with concrete. This seals the cap to the bell. The dowels on top of the cap are for tying it to concrete columns that will be erected on top of each cap to support the bridge deck.

The top right photo shows in detail how each cap is secured from the lifting caisson by means of lifting "pendants" attached to the lifting spider. The mushroom-shaped object above the cap is a temporary steel pedestal used to support the cap while it is being lowered. The lifting spider and lifting jack are being carried. The lifting girder and caisson are being carried. Two barges can be seen crossing the photo.

DeLong to Resume Pier 169 Work After Erosion Trouble

De Long Corporation resumes work this week on Pier 169 of the Astoria bridge after more than a month's delay caused by erosion of the river bottom around the pier site.

The company moved a barge to the pier site, just north of the ship channel, last weekend and planned to begin putting down a steel box framework for sheet piling of the downriver cofferdam there Tuesday. Piling will be driven around the framework.

One cofferdam was finished earlier this fall, before the current began sweeping sand from around it. Work was halted while alder brush, dredged sand and gravel were dumped into the eroded hole to restore the river bottom to its original level.

Each cofferdam at the pier site will have a concrete footing for the pier built inside it.

May Start on Columns
DeLong Corporation also may start building concrete columns

for piers north of the river channel this week. Foundations have been built for several of these piers to support the bridge deck as it rises from the Desdemona Sands causeway, 25 feet above the river, to the channel crossing 198 feet above the river.

First columns to be built will be for Pier 160 and 161, first piers south of Desdemona Sands causeway. The column for Pier 161 goes up 33 feet.

Piers in this series from Desdemona Sands to the channel are numbered 160 to 168 inclusive, going south. Foundations consisting of pairs of bell-shaped towers, joined by concrete caps at the top, are now in place for Piers 160-166 inclusive.

The bells for Pier 167's foundation were at Tongue Point this weekend, waiting to be barged to the site. The concrete cap for

this pier's foundation was cast Saturday at the Tongue Point concrete plant.

Piling Driven

Pomeroy and Gerwick, contractors building the Desdemona Sands viaduct, made steady progress all last week. They have now completed putting down piling for 30 bents, each consisting of three reinforced, pre-cast concrete piles. A total

140 bents are to be built in the two-mile stretch across the sands.

Pomeroy and Gerwick also last week conducted bearing tests on a piling near the middle of the sands, under direction of

Don Brittain, project manager for the San Francisco contractive, going south. Foundations ing partnership. The contractors have now conducted four of these bearing tests on piling along the viaduct, applying 150 per cent of maximum possible bridge load to the tested piling.

All tests so far have been satisfactory, according to Oregon Highway Department engineers.

Girder Spans Piers 172-175 of Astoria Bridge

DEC. 1963



Concrete box girder to carry Astoria bridge deck between Piers 172 and 175 on the Astoria shore spanning West Marine drive has been completed by DeLong corporation. Photo shows piers and deck. DeLong crews are now removing

timber falsework which supported construction of the bridge deck atop the piers. In background are DeLong barges and sections of other piers. (Photo by Daily Astorian)

DEC. 1963

Falsework Built for Steel Job



American Bridge Division of U.S. Steel had started first construction on its Astoria bridge steel contract, falsework bent halfway be-

tween Piers 171 and 172 on the Astoria shore. Steel construction work will continue for more than a year.

American Bridge Unit Starts Steel Work On Astoria Span



The lower right hand picture shows workmen attaching lifting pendants to a lifting spider on top of one of the bells. They are just below the lifting girder. Bolts hold the spider to the bell top.

DeLong Drives Last Piling For 32 Astoria Bridge Piers

JAN. 21, 1964

Highway Department Engineers said Monday the department so far has paid the DeLong Corporation \$4 million, slightly less than half of the total \$8.9 million of its total contract, indicating this contractor's work is about half done.

Monday, the last piling at the site of Pier 17, near the fishing wharf, is being driven by the intervening months the contractors have been at the river bottom.

The footings of the 32 piers. The 4,482 include steel, concrete and timber piles, the kind used varying according to the nature of the material into which they are driven.

Another milestone expected this week will be erection of the first structural steel by American Bridge Division of U.S. Steel Corporation.

The company's workmen returned Monday after a layoff during the holidays, to complete a falsework steel bent between Piers 171 and 172.

Company officials said they expect to bring in the first railway car of structural steel and to start erecting the truss between Piers 171 and 172 on Wednesday morning.

Pier 169, located on the north side of the main ship channel, seems destined to be the hardest luck pier of the whole bridge construction job. Work was delayed there for a long time last fall by erosion of the sand around the cofferdams put down for construction of the pier footings.

Concrete Seals Too Soft
This situation eventually was controlled last month, with the Oregon Highway Department paying for the extra work of putting in fascines, rock and other material to restore the silt eroded from around the cofferdams.

Then a seal coating of concrete, 20 1/2 feet thick, was put



American Bridge Division of U.S. Steel Corporation brought this towering barge-mounted crane into Astoria Wednesday morning to start putting up steel for the Astoria bridge. Company officials said the rectangular steel tower stands 90 feet high and the boom goes up another 90 feet, for a total of 180 feet. The rig attracted considerable attention, looming high over buildings along the waterfront Wednesday morning. The barge on which it rides is not visible here, as it is behind the dock.

First Structural Steel in Place for Span

JAN. 23, 1964



First structural steel for the Astoria bridge went into place Thursday morning. This green-painted beam was bolted to the concrete columns of Pier 172 and projects northward toward Pier 171. It will form part of the deck truss connecting these two piers. The supporting braces below the horizontal beam will be removed as soon as the truss is finished. The beam extends from the pier to a falsework bent part way between

Piers 171 and 172. Anchor bolts for the steel construction were imbedded in the concrete piers while they were being built, the beam was hoisted into place early Thursday by one of the big cranes operated by American Bridge Division, U.S. Steel Corporation. The company left its name plate attached to the beam.

Council Sets Special Meet On Kingston

The city council will hold a special session Wednesday at 7:30 p.m. for more discussion of the Kingston avenue relocation, officials said today.

There is still no certainty which of two routes will be used to relocate the street. The question must be settled this week under a deadline laid down by the Oregon Highway department.

The council has been striving to obtain right-of-way for a route lying east and north of Tidewater Oil's property, but so far has not succeeded completely.

If right-of-way cannot be obtained by the weekend, the state will put the street north and west of the Tidewater property in a route involving an S-curve, with 24 foot pavement, to which the council objects.

City officials indicated Tuesday they were not hopeful of solving the matter to the council's satisfaction.

City staff members will be on hand Wednesday night for an informal perusal of details of the proposed municipal law code with council members.

This is for making any needed corrections before the code goes to the printers, officials said. Printing of the new code is to be done during the spring by the League of Oregon Cities.

1st Truss Nearly Finished By Span Steel Contractor

American Bridge Division of U.S. Steel Corporation has nearly finished its first truss for the Astoria Interstate bridge and will start soon on the second.

This will be, when finished, the longest through truss in the world—consisting of three spans totalling 2460 feet long.

This truss will extend from Pier 171 on the Oregon shore to Pier 169 north of the ship channel. It will include the 1232 foot span from Piers 170 to 169, crossing the main ship channel, and two approach spans each 618 1/2 feet long.

The truss now under construction is a deck truss from Pier 172 to Pier 171. Steelwork has been put in place all the way between the two piers, and

a few more deck stringers on top of the truss will complete the work.

Before building the long through truss across the channel, the contractor must erect steel towers on the bases of Piers 170 and 169. Since Pier 169's foundation is unfinished, and Pier 168 has not been started, completion of the truss will be delayed for a long time—several months perhaps.

But the first span, from Pier 171 on shore to the tower to be erected on Pier 170, can proceed.

The contractor has men at work now erecting a falsework steel bent inshore from Pier 170, to support the span as it stretches out from 170 toward 171.

Steel Workers Perch on Bridge Structure



High above the rooftops of West Astoria, steel workers on their airy perches are starting to put together the steel structure of the Astoria bridge. It's an awe-inspiring sight to sidewalk superintendents. Here's a view from the downtown

Soft Concrete At Pier 169 To Delay Span Job

JAN. 23, 1964

Two huge concrete blocks, constituting part of the base of Pier 169 of the Astoria bridge, are too soft and three-fourths of each of them must be replaced.

This was determined at a conference Wednesday involving Oregon Highway Department engineers and representatives of DeLong Corporation, bridge contractors.

This will cause additional delay in the bridge job, estimated at perhaps as much as two months.

The DeLong contract is already three to four months behind schedule.

There appeared to be disagreement between the Oregon Highway Department and DeLong Corporation as to cause of 20 1/2 feet of soft concrete the defective condition of the seal would be in a rock and the

Each cofferdam is 45 by 88 1/2 feet in area. The concrete seal, poured under water through a pipe extending to the cofferdam, is 20 1/2 feet thick.

Wednesday's decision means that the contractor must remove the top 15 feet of each slab, a task complicated by the fact that the tops of foundation piling of the pier project up into the concrete slabs.

It is understood that DeLong Corporation disagrees, holding that the condition is a consequence of scouring action by the swift river current around the

River Bottom Covered

Since the contractor and the highway department disagree, the contractor has been ordered to seal the concrete with a sealant.

The highway department holds that is the contractor's responsibility and he must seal the concrete with a sealant. The highway department said the concrete was sampled before being poured into the seal and was in good condition. Faulty technique in pouring may have caused poor concrete seals, they said.

DeLong Continues Falsework Job

DeLong Corporation is continuing its falsework job on the Astoria bridge. The company is working on the falsework steel bent between Piers 171 and 172. The company is also working on the falsework steel bent between Piers 170 and 169. The company is also working on the falsework steel bent between Piers 169 and 168. The company is also working on the falsework steel bent between Piers 168 and 167. The company is also working on the falsework steel bent between Piers 167 and 166. The company is also working on the falsework steel bent between Piers 166 and 165. The company is also working on the falsework steel bent between Piers 165 and 164. The company is also working on the falsework steel bent between Piers 164 and 163. The company is also working on the falsework steel bent between Piers 163 and 162. The company is also working on the falsework steel bent between Piers 162 and 161. The company is also working on the falsework steel bent between Piers 161 and 160. 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Many Phases of Bridge Construction Under Way

Astoria Interstate Bridge Takes Shape As Work Continues

February 19, 1964



This air view shows the graceful curve of the nearly-finished part of the Astoria bridge that swings over the West End business district. At left, the first steel span of the bridge can be seen projecting from Pier 172 towards

Pier 171, out of the picture. Straddling the roadway, just above Pier 173, is a machine used for taking down the falsework underneath. Air photos on this page by George Burkharts-Meier.

Almost out of sight of Astoria folk, work is going on at the Point Ellice end of the Astoria Interstate Bridge. Here are two DeLong corporation four-posted work platforms moored

astraddle the site of Pier 5, where bells are being put down for a foundation resting on the rocky bottom. This is one pier without foundation piles.



alongside. Lower photo shows piling-driving equipment of Ben C. Gerwick and J. H. Pomeroy putting down piling for Desdemona Sands trestle. Hollow construction of concrete piling can be seen. "Tents" on three piles are shelters for workmen. Picture was taken by Emily Astorian's photographer George Burkharts-Meier from Astoria Flying Service plane.

This photo shows how the Astoria bridge will rise from the Desdemona Sands Viaduct (at left rear) to the main channel crossing between Piers 169 and 170. Pier at right, with concrete plant barge moored alongside, is Pier 167. Another

work barge can be seen beside Pier 165, where wooden forms for the concrete pier column are in place. Photo looks northward to the Washington shore.

Here is the Desdemona Sands Viaduct, where contractors J. H. Pomeroy and Ben Gerwick have so far driven concrete piling for 81 piers, with 39 still to go. Some transverse cap beams are in place, visible at near end of trestle. Also a few 80-foot lengthwise concrete beams can be seen in place.

Big 10-ton concrete barges with cranes are being used with equipment for pouring concrete into the piers. Hollow concrete piling and for putting on transverse beams. Astoria can be seen through layers of mist.

'Bridge To Nowhere' Headache For State

By GERRY PRATT
Business Editor, The Oregonian

Now, reports from the scene coming into Salem indicate the company is working the bridge with only a token force of five to ten men while the case of the contract goes to court. They have had the skeleton crew on the project for the past two or three weeks.

Jackson Refuses Request

Two weeks ago DeLong came before the Highway Commission with the first official petition for relief, though the department knew it was coming for sometime. DeLong asked the Commission to waive the contract and to allow DeLong to complete the project on force account, in fact a lump-sum contract in which the state would pay the costs and assume the contractor's liability for up to 15 per cent of the cost.

When Jackson, the Commission's Chairman, refused, "We are not about to amend or change a contract which would have made it impossible to defend ourselves in court. The state would have been of no further purpose."

Heed completion date of the bridge is June, 1965. Already the second and third contracts are reported to be in trouble because of the initial delays and the chances of coming anywhere near the completion date, remarked one construction engineer. "Are as remote as my point to heaven."

What happens to the bridge now? The reason is that it will stand as it is today, finished while the contract is threshed out in the courts. Under DeLong's plan, the state's only recourse is the penalty clause. But it is a performance bond in the full amount of the

State Studies Chances

The penalty payments of \$204,000 have been held back out of DeLong's progress payments. So far the state has paid the company \$3.4 million for the work done on the bridge. Payments have been on a monthly basis, scaled to progress reports from the field office at the bridge site. These come into Salem about the 10th of each month. So far the February payment has not been made and it will not be made unless under court order. If that payment had been issued and there had been no penalty payments, the amount due the contractor to date would be \$4,281,000, less some \$300,000 of the state normally withheld to ensure performance.

Can the bridge project fold on the failures and delays? There have been cases where contractors have failed, but not where the project has failed. At worst, the state figures, there is a possibility of a delay. With the full \$7.8 million performance bond posted, the state can and will turn to the bonding company. What can happen if the case goes this far, though not necessarily in this order, is that the bonding company can attempt to buy its way out by offering the state enough money to release the problem, the bonding company can take over the contractor's equipment and organization and finish the job; or the bonding company can hire another firm to complete the job and pick up the tab for the additional cost.

It can run a year, maybe more, and the chance of the Astoria-Megler bridge becoming known as "The E."

Firm Claims \$2 Million Damages Suffered

DeLong Suit Asks Contract Termination Or Ruling State Responsible For Errors

DeLong Corporation filed suit in federal district court, Portland, against the Oregon Highway Commission Tuesday afternoon, as the company had informed the Daily Astorian earlier in the day it planned to do.

The company, asking a declaratory judgment to fix its responsibility for alleged defects in the bridge's design, said it had suffered \$2 million in damages. DeLong seeks either a termination of its contract or a declaration that the state is responsible for errors and should pay the company for additional work required as a result of the defects.

The company filed the action after the State Highway Commission rejected a DeLong request that the state assume responsibility for a faulty foundation for Pier 169 and subsequent design defects on four additional piers.

May Cost \$300,000. State officials have estimated it may cost \$300,000 to rebuild the pier foundation, where 15 feet of concrete was found defective and will have to be removed.

The highway commission blamed it on a defect in pouring, but the company claims the pier was designed so that water eroded the river bed and got into the concrete.

Named as defendants are the highway commission, its members, state highway engineer Forrest Cooper and State Highway Engineer Ivan D. Merchant.

The suit claims the individual suits are personally liable, as well as the state. The suit said the difficulty arises from mistakes the state made in its analysis of subsoil and river bed conditions.

Plans Said Erroneous. "Plans and specifications were erroneous and inadequate," the suit said. It added that subsurface conditions bore little resemblance to conditions described in the state's plans, and that as a result the plans proved useless as a guide.

The suit said that in order for construction to continue, a redesign and supplemental plans and specifications should be provided by the state.

The suit also asked for an appointment to a special neutral arbitrator to decide damages.

Specifically, the company charged that it has found rock where it was represented that defendants had found clay, has placed piling that has dis-

appeared at places where it was represented that it would be supported by the ground; has been compelled to suspend work where the river bottom eroded to almost 90 feet below the surface, although the design was predicated upon a river bottom 48 feet below river surface." It reported "many other burdensome and damaging latent conditions different from those represented by defendant."

Problem Areas Cited. The Highway Department has denied right of the company to question the prudence of the design features and has insisted that methods of construction are the company's responsibility, the complaint said.

The complaint cited Piers 169, flanking the main ship channel; Piers 18, 19, 20 and 5 near the Washington shore as ones where erroneous plans and specifications require redesign in order to enable construction to proceed.

Without immediate relief, it will be impossible for the company to complete its contract, the complaint said.

Legal firms filing the complaint for DeLong company included Wyatt, Macdonald and Dean of Astoria; George W. Mead of Portland; Trammell, Rand and Nathan of Washington, D. C.

The worst have already begun calling it "The Bridge To Nowhere." And though they are not taking yet, "we still have not been served," the State Highway Department is worried about the immediate future of its Astoria-Megler Bridge.

DeLong Corp., of New York, which left something approaching \$300,000 on the table with its bid to build the pier system for the bridge across the mouth of the Columbia River for \$7,800,000, has been running late on the project from the beginning.

Now the company has gone to court and asked to be relieved of the contract and is seeking a new deal on the terms to finish the bridge.

The company reportedly delayed starting construction in order to build the Texas-tower type barges it is using in the pier construction. The first of these cost something in the vicinity of \$1.5 million and was built at the Albina Engine Works.

This put them on the job seven months after the contract was issued. A three month lead time on a project such as this bridge is considered normal, so the experts estimate the company was late, at least by three, perhaps four months in getting going. The DeLong plan was apparently to go all out to make up the lost time and offset the extra costs with the savings made by the special construction barges.

For a time, the seven days a week, 24 hours a day crash program looked good. Then the troubles set in, the eroding river bed shifts, the soft concrete. Nobody gambles like a contractor and these factors were all losses in the bid to make up time.

The company is now estimated to be five months behind schedule in its work. The penalty payments for coming on late are \$2,000 a day, seven days a week and DeLong's total penalty at the last reading was a whopping \$204,000, and still growing at the rate of \$2,000 a day.

GLENN JACKSON

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DeLong Prepares To Remove Soft Concrete At Pier 169; Responsibility Debate Continues

DeLong Corporation and Oregon Highway Commission are at odds over the responsibility for the soft concrete at Pier 169 of the Astoria-Megler bridge.

At the same time, the company is preparing to remove the soft concrete at Pier 169 of the Astoria-Megler bridge.

The company is preparing to remove the soft concrete at Pier 169 of the Astoria-Megler bridge.

Miss Remona Conner

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Hwy Agency Gets Dispute On Pier 169

DeLong Corporation's dispute with the Oregon Highway Department over responsibility for defective concrete in Pier 169 of the Astoria bridge went before the highway commission this week.

DeLong representatives met Monday with the commission and state highway engineer Forrest Cooper in Salem. The bridge contractors submitted their contention that the trouble was caused by conditions that did not meet original specifications; namely, that the river bottom was several feet lower than expected, due to erosion.

The highway commission took the complaint under advisement and announced it would hold its first meeting on the matter this week.

The company plans to use powerful water jets to shake loose the 57,000 cubic yards of concrete that must go to make room for firmer stuff.

The cost could run in the neighborhood of a half million dollars, according to local estimates. Highway Engineer Cooper declined to estimate the cost.

Cooper confirmed, however, that it now appears virtually impossible to complete construction of the bridge on schedule in late summer of 1965.

DeLong officials said preparations to start removing two chunks of concrete, each 45 by 84 1/2 by 15 feet, from the cofferdams of Pier 169 are progressing at Tongue Point, but declined to say how soon the removal will begin.

The company plans to use powerful water jets to shake loose the 57,000 cubic yards of concrete that must go to make room for firmer stuff.

Pier 169 of the Columbia river bridge stands idle while controversy swirls around it. This air photo shows the two cofferdams, each 15 by 84 1/2 feet, around which erosion has occurred. Concrete seals, 20 feet thick, poured underwater on the bot-

tom of these cofferdams, are unsatisfactory and the top 15 feet of each must be removed. Dispute involves who is responsible for deficiency.

Troubles Plague Pier Contractor

Legal Machinery Not Yet Moving In DeLong Law Suit

Legal machinery has not yet begun to turn in the lawsuit brought by DeLong Corporation against Oregon Highway Commission for a declaratory judgment determining responsibility for troubles in building the Astoria bridge.

State Highway Department officials said Thursday they had not yet been served with notice of the suit's filing.

When that is done, the state has 30 days by federal court rule in which to file answer.

Meanwhile the Portland press has taken up the story of the bridge's problems with apparent relish.

Robert Macdonald of local counsel for DeLong took issue with a statement published in Friday's Oregonian that the company had filed suit to be relieved of its contract.

Want Responsibility Fixed. Not so, said Macdonald. The suit for a declaratory judgment is intended to find a way by which the company can finish its contract with assurance that

proper responsibility of the company and the state will be fixed by the court.

The legal dispute has halted work on Pier 169 pending the court's decision, but other work is continuing under the contract.

This legal delay is just the latest in a series of troubles that have plagued the DeLong company on its contract to build 32 piers for \$8.9 million.

The company is now far behind schedule on its contract—four months, say some, six months say others. Even more, say a few.

Work started in November. Oregon Highway Department has felt that DeLong was behind schedule from the start.

The bids for the pier job were opened in late June, 1962, and the contract awarded soon afterward.

Not so, said Macdonald. The suit for a declaratory judgment is intended to find a way by which the company can finish its contract with assurance that

Astoria, Oregon, Friday, February 21, 1964

It was November 5 when first work began. It was January when one barge arrived from the Atlantic via the Panama canal, and it was February 18 when the second Portland-built barge was delivered.

The company hoped to make up time by efficient use of these barges, but soon ran into troubles. For many reasons, the company blames poor design and bad information about the nature of the soil under the river.

Company officials say they had to run a series of soil tests of their own all across the route of their contract to obtain their information. There were of course storms and other normal delays which slowed the work.

Real disaster struck on May 21 when project manager George Bauer was killed aboard a work barge in the river.

Barge Overturned. Bauer was one of the company's top officials and was brought here from New York

to speed the work along.

On July 23, a barge loaded with 200 steel H-beams, comprising 31,000 lineal feet of foundation piling for Pier 169, turned over in the swift current and plummeted its entire cargo to the river bottom. Divers had to go down and sort out the matchstick-like pile—all this took days.

Soon afterward, as steel piling were put down for cofferdams at Pier 169, the rushing river began eroding the sand from around the cofferdams.

Work halted in late September while bundles of branches, rocks, silt and other material were poured into the hole.

Finally the eroded material had been partly replaced and concrete seals were poured across base of each cofferdam. Then came the discovery that these were defective and must be replaced—at great cost and great delay. Then came the decision to go to court.

Dates Listed. Completion dates given by the

Highway Department for various phases of the DeLong contract include:

Piers 169-175 inclusive, October 31, 1963. They are now complete, except for fenders around them, and some painting.

Piers 5-12 inclusive and 16-19 inclusive, November 30, 1963. Piers 16-17 are now nearly finished, but Piers 6-12 so far have nothing but foundation piling in place, and Pier 5 has become involved in delays involving quality of the rock foundation.

Piers 168-169, January 31, 1964. Here is the major trouble. Pier 168 has been the hard-luck pier of the whole job and, for all practical purposes, has barely been begun. Pier 169 has been almost completely completed.

Piers 13-20, June 30, 1964. Here again there is trouble, involving erosion around the bell-shaped bases of Piers 18, 19 and 20. All are far from finished.

Agreement Reached for New Street

City Council Wins Long Struggle Over Kingston Avenue Relocation

Cox said that delay in reaching this agreement may force another postponement in calling for bids for a contract to build the Astoria approach of the new interstate bridge. The bid call, already twice postponed during the prolonged argument on Kingston avenue, was last scheduled for mid-March.

Cox said it will cost the state more money to build the route chosen last night than the one proposed by the state. He could not say how much more, as the state has not yet concluded discussion with Tidewater Oil on purchase of property.

City council members said in their opinion the state would have to pay considerably more for acquisition of property for the S-curve route than for the route chosen. It would have taken much of the Longshoremen's union parking lot and much of the Tidewater Oil prop-

erty. The agreement was made subject to obtaining letters of intent to donate property.

Thursday noon from Union's Packing and the Tidewater Oil. No trouble was expected in obtaining these letters.

The city council has long insisted this route for the new street preferable to one laid out by the Highway Depart-

ment. The route approved Wednesday night leaves W Marine Drive at right angles, runs

north along the east side of the Tidewater tank farm across the SP&S tracks, then turns at right angles westward toward Fishermen's Dock.

The other route, originally

proposed by the Highway Department, would have run east and north of the Tidewater Oil enclosure in West Astoria.

The agreement provides that the city will obtain deeds from Fishermen's Packing Company and the Longshoremen's union for property needed as right-of-way and that the

Highway Department will obtain needed property from Tidewater Oil.

To Obtain Letters
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Bridge Construction Slowdown Continues, Pier 5 Work Halted

The Daily Astorian, Astoria, Oregon, Wednesday, February 26, 1964

Work on the Astoria bridge slowed a little more this week. DeLong Corporation halted work Tuesday on Pier 5, near the Washington shore.

American Bridge Division, which may run out of work in 10 days, shifted one steel-raising gang to Vancouver to do other work.

The third bridge job contractor, the J. H. Pomeroy-Ben Gerwick combination, continued driving concrete piles for the Dadsdemon Sands trestle unaffected by litigation that has engulfed the other phases of the bridge job.

DeLong spokesmen said the shutdown on Pier 5 was for the same reason as previous shutdowns on Piers 18, 19 and 20, where the company contends it has encountered conditions other than as specified by the state.

One problem, still to be solved from the Highway Department how to proceed," an official said. "We do not want to assume responsibility for changes in construction methods. So far the state has not given the guidance we ask."

Says Rock Soffer, At Pier 5, where there is a rock base, DeLong officials say the rock was softer than specified, and this requires a change in plan.

DeLong now has only 65 people at work, including its office force, against 180 when it was at peak employment a few months ago. More than 100 have had their jobs interrupted by the dispute with the Highway Department that led to a lawsuit filed last week in federal court.

"We are trying to hold our key men," an official said. "We hope the others will return as

soon as present troubles end. We have a satisfactory crew."

A few of the DeLong workers caught on with American Bridge, but face a possible termination of work there soon.

One Span Finished
This firm has gangs busy riveting the first and only span it has finished, from Pier 171 to 172.

The riveting will last 10 more days. Then, unless the company decides to go ahead with the next span northward from Pier 171 to a steel tower to be built on Pier 170, there will be a shutdown.

The decision whether to go ahead has not been made. "We don't want to have this next span hanging out over the river for six months or more, if the litigation delays pier construction that long," said an American Bridge official.

If the company shuts down 10 days hence, it will lay off 15 men of its riveting gangs.

SALEM (UPI)—The Highway Department had no comment today on action it may take in the wake of a suit filed against the department by the De Long Corp., New York contracting firm engaged in work on the Astoria bridge.

"In due time we will file a reply in Federal Court," a department spokesman said. He said the suit is being studied by the department and highway commissioners.

The contractor filed for a declaratory judgment for additional funds for construction of bridge piers, claiming the department's specifications were inadequate.

Work has been stopped on Pier 169 and on several other phases of the DeLong contract, pending settlement of the litigation. The company has asked a declaratory judgment in Portland federal court, prescribing terms of an agreement to permit continuation of the pier construction.

J. H. Pomeroy and Ben C. Gerwick, who have the contract to build a trestle across Dadsdemon Sands, have continued work steadily through the past week, Highway Department engineers reported. Their work has not been affected by the litigation and partial halt of DeLong Corporation's work.

Orphan Bridge Links Languish At Dock

THE OREGONIAN, WEDNESDAY, FEB. 26, 1964

Sitting rather forlornly on a pair of barges lashed side by side is the 325-foot Washington shore span of the Astoria-Megler bridge, waiting for a tow to Astoria. The pier upon which this span and six more like it will be placed are yet to be completed by DeLong Corp., which holds the \$7,868,033 contract for the bridge piers.

American Bridge Division of U.S. Steel Corp. holds a \$10.5 million contract for the steel work and planned to start with this span, the first out from the Washington shore. It was scheduled to be finished at the former Vancouver shipyard, where the steel company has leased space for assembling the steel spans, last December, but work was delayed because there was no place ready for it upon arrival at Megler.

The company was prepared to assemble one span like this a month for a delivery to the bridge site. Assembly was to be done on the barges, and each span was to be slanted just as it will be when in position in the bridge.

The barges are 180 feet long and about 40 feet wide, with heavy steel beams tying them

together. Upon arrival at the bridge site, the barges would be slid between the piers so the span ends would fit right into position. Each end of the dispute between DeLong and American Bridge in Portland.

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SPAN FOR BRIDGE TO NOWHERE waits on pair of barges at former Vancouver shipyard, waiting tow to Megler end of Astoria bridge. Piers are not ready for it. Span is 325 feet long, overhangs both ends of barges.

March 6, 1964

Steel Delivered for Pier 170 Tower



American Bridge Division, steel contractors for the Astoria bridge, are unloading steel to be used in erecting a tower on

Pier 170. The tower will help support the span over the main channel. (Daily Astorian Photo)

March 26, 1964

DeLong Crews Pour Concrete For Pier Tower

DeLong Corporation poured concrete Wednesday for the upper section of the tower on Pier 167 of the Astoria bridge that is being the final construction job the company will do before settlement of its lawsuit with the Oregon Highway Commission.

The company is doing considerable cleanup work on the completed part of the bridge between Piers 172 and 173 and has considerable repair work in progress at Tongue Point on barges, cranes and other equipment.

A hearing is scheduled Monday in federal district court, Portland, on the Highway Commission's motion for dismissal of DeLong's suit for a declaratory judgment.

Col. L. B. DeLong, head of the contracting firm, has left Astoria for Europe to check two or three contracts his company has in progress there.

One of these is construction

DeLong Corporation officials said Tuesday the company was filing suit against the Oregon Highway Commission and its staff in Portland federal court, a declaratory judgment to determine responsibilities for conditions that have arisen in building the Astoria bridge.

The filing followed rejection by the commission last week of the company's request that the state assume responsibility for faulty condition of Pier 169's foundation and for other problems that have developed in building the structure.

Named as defendants are the Oregon Highway Commission, its individual members, Forrest C. Cooper, state highway engineer, and Ivan Merchant, state bridge engineer.

In the pleadings, the company noted that it has sustained damages of around \$2 million so far due to what it contends are defects in design of the structure.

"The suit is asking that the court determine the rights of the parties in regard to major problems arising from what the company officials feel are incomplete and erroneous specifications and inadequate design as furnished and presented by the commission in letting bids for the Astoria bridge," the company said in a formal statement.

Work Continues
Officials stated that the company is continuing to work wherever possible on the bridge in keeping with their policy of doing everything that can be done to get the bridge built.

"There are major areas, however, where changed conditions have made further work impractical without the state accepting responsibility for design and without a working agreement being made as to the greatly increased cost," the statement added.

"The company has spent enormous sums of money over and beyond its payments from the state because of the complete variances between actual conditions as shown by the company officials' feel are incomplete and erroneous specifications and inadequate design as furnished and presented by the commission in letting bids for the Astoria bridge," the company said in a formal statement.

Sewering Was Problem
"In addition, although the highway commission had informed the state legislature that a problem to be anticipated in building the Astoria bridge was scour and undermining of the river bottom, there appears to have been no consideration of that in the designing of the bridge and as a result, scour at one pier alone appeared which lowered the river bottom from 48 feet below the surface to almost 50 feet. Similar scour problems have arisen all along the bridge site."

The DeLong Corporation feels that they are left no alternative but to be instructed by the Highway Commission as to the design and procedure as well as receive assurance that the additional financial burden outside the scope of the contract will be met.

"It had proposed to the highway commission a working arrangement wherein

State Asks Court Drop Span Suit

SALEM (UP)—The State Highway Commission Monday asked the U.S. District Court in Portland to dismiss a suit filed against the commission involving the Astoria bridge.

Leonard Lindas, commission attorneys, claimed the federal court had no jurisdiction over a state agency.

De Long Corp., New York, filed suit Feb. 18 asking its \$7.8 million contract to build piers for the bridge either be terminated or that work proceed on a cost-plus basis.

The firm charged that the commission's specifications were faulty, causing extra expense for the company.

If the Federal Court dismisses the case, it is expected suit will be filed in a state court.

Work on the \$24 million, 41-mile bridge is behind schedule.

Attorneys for DeLong Corporation said here Tuesday they were disappointed that the Highway commission had not accepted federal court jurisdiction. "We filed suit there because we thought we would get faster action," said Robert Macdonald of the firm of Wyatt, Macdonald and Dean.

Macdonald said that his associate Wendell Wyatt was in Portland Tuesday and would undoubtedly consult with others of the DeLong Corporation's legal counsel as to their procedure in response to the Highway commission's action.

Macdonald said the request for dismissal of the federal court suit would further delay the resumption of work on the bridge.

DeLong Corporation has started work on all but three piers in mid-river, pending settlement of its suit against the state.

Effect of DeLong Pact Cancellation On Suit Unknown

Local counsel for DeLong Corporation said Tuesday they are not certain yet what effect the Oregon Highway Commission's cancellation of the DeLong contract will have on the suit for declaratory judgment the contracting firm has brought in Portland federal court.

The highway commission had previously challenged the federal court's jurisdiction in this case. Arguments on the commission's motion for dismissal are scheduled Friday of this week in Portland.

Notice of the contract cancellation was received here Monday by DeLong Corporation. Cancellation will become effective in seven days, or next Monday.

The notice found DeLong's work on the Astoria bridge virtually ended. Three men were cleaning up on the completed segment of the bridge that stands on the Oregon shore. Other workers were repairing barges and equipment at Tongue Point. This repair work presumably will continue.

Other contractors on the bridge were still working this week, unaffected so far by the DeLong Corporation's problems. However, US Steel Corporation will run out of work to do this spring.

Ben C. Gerwick and J. H. Pomeroy, building the 2.1 mile Desdemona Sands strait, entered a new phase of work this week.

The contractors began building steel forms for deck spans. So far they have driven piling for 113 piers of a total 139, have capped about 40 piers, and have laid lengthwise beams on 19 spans. Deck spans were started this week on three spans.

US Steel Corporation workmen were riveting the tower on Pier 170 and erecting a floating derrick to be used in hoisting steel to the lofty main channel span, some 300 and more feet above the river. They were also working on a false work bent near 170 to support the span between Pier 171 and 170. Construction of this span will start May 1. When it is finished US Steel will be out of work until more piers are completed by DeLong or by someone else.

March 18, 1964

State Loses Bid To Delay Depositions

Federal District Judge William East has overruled a motion filed Monday by the Oregon Highway commission to postpone taking of depositions in the action brought against the commission by DeLong corporation.

Judge East overruled the state's motion Tuesday in Portland federal court.

Wendell Wyatt of DeLong corporation's legal counsel, said taking of depositions from witnesses will take place Tuesday and Wednesday. The depositions provide testimony in support of filing of the DeLong suit in federal court.

The state has moved for dismissal of the suit on grounds it should have been filed in a state court.

Wyatt said the commission's motion to postpone the depositions was "an attempt to delay the trial of this case." He said the commission's motion was "an attempt to delay the trial of this case." He said the commission's motion was "an attempt to delay the trial of this case."

Will Hold Bond Firm Responsible

SALEM (UP)—The state of Oregon has fired the latest blast in the battle over pier construction on the \$24 million Astoria-Megler bridge near the mouth of the Columbia River.

The State Highway Commission announced it was terminating the \$7.8 million contract of the De Long Corp., of Brooklyn, N. Y., to construct 32 piers for the bridge.

Earlier the De Long Corp. had brought suit in Portland Federal Court.

The commission also told the Travelers Indemnity Co. of Hartford, Conn., holder of the De Long Corp. surety bond, that it would be held responsible for completion of the work.

The highway group said that if the bond holder did not get work going promptly it would either do the job with state crews or call for a new contractor.

The commission told the De Long corporation that it was rescinding the contract "for willful failure or refusal...to faithfully perform the contract."

Suit Claims Errors

Last month the De Long Corp. filed suit in U.S. District Court in Portland, claiming the state had provided faulty engineering specifications. The corporation said the Highway Department made faulty test borings in the river bed and that water had seeped beneath the footings to Pier 169 in the middle of the river, and had ruined concrete work.

The suit seeks to allow the contractor to continue work on a cost-plus basis. The state has asked that the suit be dismissed.

A hearing on the state's request is scheduled April 10 in federal court at Portland. Leonard Lindas, chief counsel for the Highway commission, said the state did not believe federal court had jurisdiction in the case.

Stoppage of work on the pier project has virtually halted major construction on the 41 mile bridge, which was originally scheduled for completion in mid-1965. The Highway Department has been unable to provide a new date for completion.

In Astoria, E. J. Scheide, De Long office manager, said Col. L. B. De Long, of the construction firm, was in Europe on business.

In a letter to the corporation and the indemnity company, the Highway Commission listed eight points of alleged contract violation.

- Substantial abandonment of the project.
- Refusal and failure to supply sufficient properly skilled workmen.
- Failure to remove and replace defective work, particularly at Pier 169.
- Failure to make prompt payment for material and labor.
- Disregard of instructions of the engineer to proceed with the work.
- Inability or unwillingness to proceed with the contract by its terms as shown by the complaint filed in U.S. District Court.
- Failure to vigorously prosecute the work.
- Failure to complete the various units of work by contract deadline.

April 14, 1964

Col. DeLong Back from Europe Visit

Col. L. B. DeLong, head of the DeLong Corporation, has returned from a visit to Europe, where he has other contracts in progress.

Attorneys for DeLong said he is holding his contracting equipment here ready to resume work at any time.

DeLong Corporation has filed suit in Portland federal court to demand revision of terms of the contract for building 32 Astoria bridge piers on the grounds the Oregon Highway Department had made errors in design.

The Highway Department has asked dismissal of the suit on the grounds the federal court lacks jurisdiction, and has cancelled DeLong's contract. Hearing on the motion for dismissal has been set for argument in Portland district court on April 20.

The Salem Capital Journal recently published an interview with R. J. Strasser, head of the Strasser Drilling company, who had done drilling work for DeLong Corporation in the Columbia to check results of drilling done previously by the Oregon Highway Department. Strasser said he found nature of the soil structure under the river different from that found by the state in several cases, notably at Pier 5. This is one of the piers where DeLong contends the state's findings were in error.

Strasser told the Salem paper that the state had selected to do test drilling in the river bottom with its own forces rather than contract with private drilling firms which were available and are experienced in this sort of work.

April 24, 1964

Steel Spider Web at Bridge Site



Firm Assembles Derrick for Use In Building Truss

U. S. Steel Corporation was assembling a huge barge-mounted derrick Friday for use in building the main truss of the Astoria bridge.

The derrick, when complete, will tower 405 feet above the water. It will consist of a square steel tower 240 feet high, a boom 130 feet long on top of it, and a job or boom extension 25 feet long.

The derrick, partly assembled, was barged in from Portland early Friday and assembly will be completed here.

U. S. Steel Corporation's American Bridge Division Friday completed erection of a steel tower on Pier 170, the south support of the main ship channel crossing.

There's quite a spider web of steel at the Astoria bridge site, where U. S. Steel Corporation is preparing to hoist another steel span into the air. At left is the tower on Pier 170, which is part of the permanent holder structure, and will support the new span. In the center is a steel derrick being used to erect the tower at right, a temporary bent to support the new span as it extends out into the river from Pier 171, on shore. Not shown is another derrick, to right of picture, which will tower over 350 feet and will be used to hoist steel into place for the high span.

For the next two weeks riveting work will be in progress on this tower, to replace with rivets the bolts which now hold it together.

The company will soon start erecting the southern part of the big truss that will carry the bridge across the main channel. The 405-foot derrick must lift steel items as high as 360 feet for construction of this truss. The deck of the bridge will be 198 feet above the river as it crosses the main ship channel, and the steel truss will tower high above the deck.

May 20, 1964

State Will Award New Bridge Job

The Oregon Highway Commission will award a new contract to complete the bridge over the Columbia river at Astoria soon, Portland cooper, state highway engineer, said today according to the Associated Press.

Construction of the \$24 million bridge has been at a standstill since the DeLong corporation of Brooklyn, N. Y., holder of \$7.8 million pier contract quit work. It claimed bridge specifications were faulty.

Cooper said bids would be asked in the near future to complete the DeLong contract. The DeLong corporation has filed suit in the federal district court in Portland asking to have its contract cancelled or to be allowed to proceed on a cost plus profit basis.

The commission filed a motion to dismiss the suit but there has been no ruling as yet. The commission cancelled the DeLong contract April 8. It claimed the firm's work was defective and the firm failed to provide enough workers to build the piers.

Cooper and his top engineers held an all day meeting Wednesday in Salem to make plans for the calling of new bids.

May 20, 1964

SALEM (UP)—The Oregon Highway Commission today announced completion of bridge pier work on the \$24 million Astoria bridge.

The department said that bids would be opened either June 23 or 24, but a notice to contractors issued shortly before noon listed the bid opening for 9 a.m. June 23.

The bid invitation lists three alternate specifications, and bidders will be required to bid on all three.

Major items in the project include 758 piers, about 40,000 cubic yards of concrete, placement of 2.3 million pounds of steel-furnished metal reinforcement, and between 184,000 and 383,000 pounds of other reinforcement metal.

Meanwhile, the department said that Pomeroy and Berwick was proceeding with work on the \$4 million contract for construction of the Desdemona Sands viaduct, and that the U.S. Steel Corp. had resumed work on the \$11 million project to build the bridge superstructure.

Work on the bridge which will span the Columbia River from Astoria to Megler was interrupted when De Long Corp. of New York charged that the state's specifications for the project were in error. De Long asked to complete its work on a cost-plus basis.

The Highway Department refused the cost-plus plea, fired De Long from the project, said it would look to De Long's bonding company to pay for completion of the piers, and that it would call for a new contractor.

De Long had also filed suit in Federal District Court in Portland demanding that it be allowed to complete the work on a cost-plus basis. The issue is still pending before the court. The state has claimed the Federal Court does not have jurisdiction.

De Long had been awarded the \$8.8 million contract to construct 32 of the bridge's piers. The firm had done some work on all 32 piers, and has completed 14.

Under the terms of the new contract, to be called for Thursday, the contractor will have 360 calendar days in which to complete the piers.

The Highway Department refused to estimate the cost of the new contract, but estimated that De Long had completed about 50 per cent of its \$8.8 million job before halting work.

State To Ask Bridge Bids

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Laborers Dispute Stops Work On Astoria Bridge Viaduct

2nd Major Job Halted In Area

Pickets of the Oregon District Council of Building Laborers halted work on Desdemona Sands viaduct contract of the Astoria Interstate bridge Monday morning.

It was the second major construction job here to be halted by the spreading statewide strike of the building laborers. Pickets had showed up Thursday to halt the Smith Point bridge contract of Peter Kiewit Sons company, that job remained idle Monday.

Between 50 and 60 men were workless Monday as result of



Pickets from the Oregon District Council of Building Laborers appeared outside the Pomeroy and Gerwick office in Astoria Monday morning to halt work on the Desdemona Sands viaduct of the Astoria bridge. (Astorian Photo)

May 19, 1964

Agreement Ends Laborers' Strike

Span Jobs In Area To Resume

PORTLAND (UPI)—After a marathon 21-hour negotiating session, agreement was reached this morning to end a 16-day strike of laborers against contractors in Oregon.

Federal Mediator Bob McClelland announced the two

Striking members of the Building Laborers' union are scheduled to return to work Wednesday morning on two jobs in this area, Eugene Koch, business agent of the union in Astoria, said Tuesday.

No laborers employed on the Desdemona Sands viaduct were expected to return to work until after the agreement was reached.

There are no members of the Building Laborers' union employed on the Smith Point bridge, but the union is not expected to return to work until after the agreement is reached.

The Desdemona Sands viaduct is a 1.2-mile-long bridge over Youngs Bay, built by the Pomeroy and Gerwick Co., a joint venture of the Pomeroy and Gerwick Co. and the US Steel Corporation.

Completion Near

The Desdemona Sands viaduct is a 1.2-mile-long bridge over Youngs Bay, built by the Pomeroy and Gerwick Co., a joint venture of the Pomeroy and Gerwick Co. and the US Steel Corporation.

PORTLAND (UPI)—Representatives of the Oregon District Council of Building Laborers and the Associated General Contractors of Oregon met Tuesday morning in an attempt to end a construction strike in the state.

Federal Mediator Bob McClelland announced the meeting Saturday.

It would be the first meeting between the two sides since the laborers went on strike last Monday. Their contract expired December 31.

Jobs involved here are the Ben C. Gerwick and J. H. Pomeroy contract for constructing the Desdemona Sands viaduct of the Astoria Interstate bridge, and the Peter Kiewit Sons Company contract to build the Smith Point bridge across Youngs Bay.

The settlement is subject to ratification by locals of the Oregon District Council of Laborers, which went on strike against Associated General Contractors on May 4.

The contract would run through May 31, 1967.

McClelland said work would resume as soon as the results are tabulated, providing the locals accept the proposal.

This could be late today or early Wednesday, he said.

He said the settlement carried a union negotiating committee recommendation to accept.

Details of the contract were not released, but it was understood wages and travel pay were key issues.

The strike affected several highway and sewer projects throughout the state, as well as Fall Creek and John Day Dams. However, work on the latter resumed last week following a separate agreement by a contractor.

Associated General Contractors said that heavy labor scale ranged from \$3.15 to \$3.45 an hour before today's agreement was announced.

The union has about 3,000 members in Oregon. The old contract expired Dec. 31 and laborers worked 13 more days on an extension of it. Since then they have worked with no contract.

Laborers in 5 1/2 southwest Washington counties agreed to a new contract in January but the Oregon laborers turned it down.

June 16, 1964

Steel Work Resumes On Bridge

American Bridge Division of US Steel Corporation resumed erection of steel work on the Astoria bridge Monday following arrival of a barge load of newly-painted steel from Vancouver, Wash.

The steel contractor began the construction of a through truss which will carry the bridge out from the Astoria shore across the main ship channel.

Construction began at Pier 170, just off the Astoria waterfront.

The steel network of the through truss will spread outward in both directions from the top of the pointed steel tower on this pier. Knee braces have just been put temporarily in place at the top of the tower to keep the truss from teetering on its narrow support, before it is anchored at its shoreward end on Pier 171.

Had To Wait For Steel

Construction of this truss could not be started until the steel members needed for it could be painted at US Steel's Vancouver paint shop.

The company had to revise its schedule of steel erection which DeLong Corporation got behind and finally stopped work on construction of piers.

Desdemona Sands Trestle Section of Bridge Under Construction



State Highway department engineers said Monday that J. H. Pomeroy and Ben C. Gerwick are progressing steadily on construction of the Desdemona Sands viaduct portion of the bridge.

The contractors have been pouring concrete for sections of the deck twice a week, working northward from the south end of the viaduct. They are also still busy placing concrete caps on piers, and laying beams and girders to carry the bridge deck.



Form Traveler Used on Bridge Viaduct



This machine is a former or form traveler, used to place and remove the steel forms for the concrete deck of the Desdemona Sands viaduct now being built by contractors J. H. Pomeroy and Ben Gerwick. The machine travels on rails, as shown here. The arms extending over the sides of the bridge will place forms in the gaps between girders, under the

bridge, and remove them after the concrete decking is poured. The steel forms permit pouring sections of deck 24 feet long and 33 feet wide—full width of the bridge deck. Highway engineers say this is one of the first places this type of forming machine has been used in the Northwest. More photos on Page 6.

Here are photos showing construction of the Desdemona Sands trestle portion of the Astoria bridge. Upper left, floating derrick at left is used to carry materials to the construction work. This photo shows truss before the deck has been laid. Beams and girders are in place. Top right photo shows portion of trestle with concrete deck laid, covered by cloth while the concrete cures. Below, left, this photo shows detail of trestle construction. Each pier is of three concrete piling, 48 inches in diameter, surmounted by a concrete cap supporting four vertical girders.

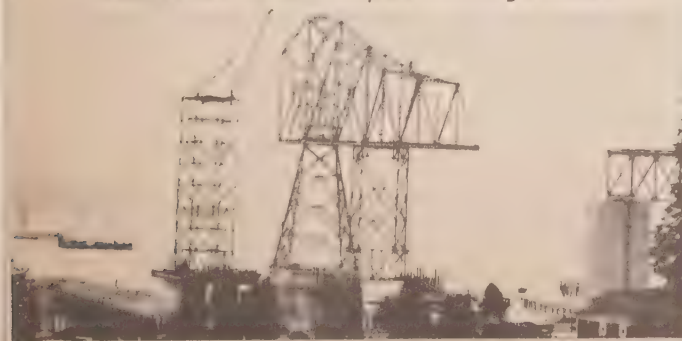
Bridge Skyline Here Gets New Look



There's a new look to Astoria's spectacular bridge skyline after the floating S-I derrick of American Bridge had its position changed. It has been moved from east side of the main pier and steel frame to the southwest corner. Here it is seen placing a new bottom cord reaching toward the shore.

September 15, 1964

Steel Work for Main Span of Bridge Starts



New and dramatic phases of Columbia River bridge construction Tuesday were well under way. Barge supporting the 460-foot crane of American Bridge has moved out into the ship channel to start its work on the main span across the river. First steel was placed by the crane Monday and Tuesday.

September 22, 1964



Unfinished steel span for Astoria bridge is silhouetted against cloudy sky. Steel structure dominates Astoria skyline in this view, photographed from the Astoria-Megler ferry. (Photo by Daily Astorian)



Barge-mounted crane at left is placing steel. In foreground is inshore end of the main span. (Daily Astorian Photo)



Top photo shows workmen of American Bridge Division guiding a steel beam into position for the framework of the Astoria bridge truss between Piers 170 and 171. The beam hangs from the arm of the company's tall barge-mounted crane. Lower photo is a lengthwise view along the bridge, as seen from the heights of Astoria's West End.

Workmen Guide Steel Beam Into Place



Bridge Project May Cause Delay For Ship Traffic

Because of the new phase of Columbia river bridge construction which starts Monday, Astorians may be treated to the rare sight of large ships anchored upriver from the work during periods of strong ebb tides.

This was the consensus of Columbia river bar pilots Thursday as they noted the position which will be occupied by a 460-foot high floating derrick of American Bridge.

D. A. Dickinson, secretary of the pilots' association, said ships heading downriver may simply drop anchor and wait for better tide conditions.

Other pilots commenting and agreeing that problems will be greater included J. F. DeSassie and R. W. Gibson, who recently joined the group. There are now 17 pilots in the association.

Operations starting placement of steel over the channel area are scheduled to be started by American Bridge Monday. Official notice to mariners has been given by the Coast Guard.

The floating derrick is to be located some 500 feet north of bridge Pier 76 and working 100 feet east and west of the main bridge line.

There appeared to be no real concern over safety as a result of the bridge construction, but there was acceptance of the need for additional limitations and precautions during construction.

Pilots anticipated no problems in maintaining the required speed of 3 knots or less, and most ships move at that speed anyway.

Steel Span Connects Piers 170, 171 of Astoria Bridge



Piers Linked By Truss, Structure Fits Perfectly

It fitted exactly. Workmen of American Bridge Division, US Steel Corporation, faced the steel network of the Astoria bridge cross-channel truss the full distance from Pier 170 to Pier 171 Monday.

It was a tense moment. The steel structure had been pushed shoreward 616 feet from its anchor on Pier 171, supported only by a temporary false-work bent about one third of the way. Would it fit? A 1-1/16 inch hole on the last "lower chord member" or deck beam had to fit exactly over a 1-1/16 inch hole on a steel plumb post on top of Pier 170.

These two holes had to coincide so closely that a 1-inch steel drift pin fastener could be driven through them.

"The fit was so good that the pin was slipped in without having to hammer it in," said Robert Ellison, resident bridge engineer for the Oregon Highway Department. "We are very happy."

Work Progressed Accurately. Highway engineers were reassured because the triangulation and calculations they had done to locate the first river pier had been proven correct. And American Bridge Division people had a

right to be happy because their work had been demonstrated accurate.

American bridge Division still has to place some truss members at the shoreward end of the span, and it will carry the hanging northern end of the truss out a few feet more over the channel before knocking off work on the channel crossing until Piers 168 and 169 on the north side of the channel are finished, months in the future.

The company will work about two more weeks on this truss, then will shift a small crew to the area between Piers 160 and 167, where the bridge descends northward from the channel, crossing to the Desdemona Sands viaduct.

Deck girders are to be laid from Pier 160 to 164, and deck truss work from 164 to 167. Pier 164 is the one where the bridge seems to step downward, as seen from the shore.

Foundation Progressing. Meanwhile Raymond International Corporation continued to make progress this week on the foundation work at Piers 168 and 169, the ones that have to be finished before the 2664-foot viaduct had been proven correct. And American Bridge Division people had a

At Pier 169, removal of weak

concrete from the pier base continued, and it was estimated that seven weeks more will see completion of this task. A concrete seal has been laid on the bottom of the steel cofferdam at the site of Pier 168, and water was being pumped out of the cofferdam this week preparatory to pouring foundation concrete.

Work also continued steadily on construction of piers near the north end of the bridge, and on the half-finished Desdemona Sands viaduct.



The steel span between Piers 170 and 171 of the Astoria bridge was connected yesterday with a junction at Pier 170. The upper photo

was made Monday afternoon following the closing of the gap shows in the upper photo, taken late last week.

Pacific Concrete Low Bidder On Astoria Bridge Approach



A wandering seagull inspects the unfinished part of the Desdemona Sands trestle on the Astoria bridge. The photo shows several of the 139 piers of three concrete piles each

which will constitute the trestle. A work barge of J. H. Pomeroy and Ben Gerwick, the trestle contractors, stands beside the bridge. Two piers have been capped.

Contractors Making Progress On Three Phases Of Astoria Bridge Construction

Opening of bids Tuesday for a fourth Astoria bridge contract, the approach construction, found three other bridge contracts progressing steadily, with an estimated 150 men at work building piers, laying bridge deck and putting together steel framework.

Raymond International Corporation, newest arrival in the bridge-building enterprise, has men at work on both sides of the Columbia river, completing the abandoned DeLong corporation's pier-building contract.

Raymond's first and most pressing task is completion of Piers 169 and 168, the two northern supports of the 2664-foot steel through truss that will carry the bridge across the main channel of the river.

Concrete Removed

Raymond has one crew busy getting the unsatisfactory concrete out of Pier 169, using powerful water jets to break up the crumbling material, and pumps to remove it from the inside of the cofferdam. Highway engineers said they don't know how long this task will take.

The poor concrete of this pier was a bone of contention that helped end the DeLong contract. Raymond workmen also have completed the 88 1/2 by 45 foot steel cofferdam around the base of Pier 168, north of 169. They poured a 14-foot thick seal coat of concrete under water inside the cofferdam, 44 feet down in the river, this week. Next they will pump the cofferdam dry and pour concrete for the foundation. This pier will be a single rectangular column, the twin of Pier 171 standing on the Oregon shore.

Raymond International also has men at work on several piers on the north side of the river, and men working at Tongue Point building the concrete shells used as supports for the river piers.

Extending Truss

American Bridge Division of US Steel was extending the unfinished trans-channel truss out northwest over the river from the tower at Pier 170, just off the Astoria waterfront. This truss is also being extended southward to Pier 171, the

southernmost support of the trans-channel through truss. This truss, when finished, will be the longest through truss in the world.

American Bridge will have to

stop work on this truss until the two northern support piers are finished. Highway engineers estimated that it will take two months to complete the southern part of the truss, before the contractor has to stop. This truss will then project 352 feet out into the air beyond Pier 170. It will remain hanging out over the channel until Raymond International completes the two piers on the north side of the channel.

J. H. Pomeroy and Ben Gerwick, who are building the 2.1 mile viaduct across Desdemona Sands, continued to work steadily, as they have done all summer. Highway engineers believe they have an excellent chance to complete their contract on schedule on March 31 next year. They have all the piling in for the 139 piers of this viaduct and about a fourth of the deck laid.

Portland Firm Asks \$1 Million

SALEM, UPI — Pacific Concrete Co., Portland, was apparent low bidder today on the final major contract for the \$24 million Astoria bridge at the mouth of the Columbia River.

The firm bid \$1,173,333 on the Astoria approach project which includes toll booths, grading, paving, signing and structures. The contract calls for the work to be completed by May 31, 1965.

Included in the work is construction of the toll plaza, the toll office building, and toll collection facilities.

The bid is expected to be awarded by the Highway Commission within the next few days.



BRIDGE TO NOWHERE is title given to partially completed section of the \$25,500,000 Astoria-Megler bridge.

THE OREGONIAN, FRIDAY, OCTOBER 30, 1964

Bridge Looms Over Skyline of Astoria



The new Astoria bridge appears to straddle the entire city of Astoria in this view through telescopic lens from atop the John Jacob Astor hotel. Most of the steel work on the south end of the bridge is placed and work has started on

north piers of the main channel. The giant crane of American Bridge has been moved across the channel for that work, leaving silhouette of the south portion clear against the sky.

Steel Work On Main Truss Ends

Erection of steel has ceased on the 264 foot cross-channel main truss of the Astoria bridge.

Work halted with the unfinished truss projecting 400 feet northward from Pier 170 over the ship channel.

Work cannot be resumed on the truss until Piers 169 and 168, which will support its northern end, are finished. This may be next May, but the site high-

Men worked 45 feet below the river surface at the bottom of this cofferdam.

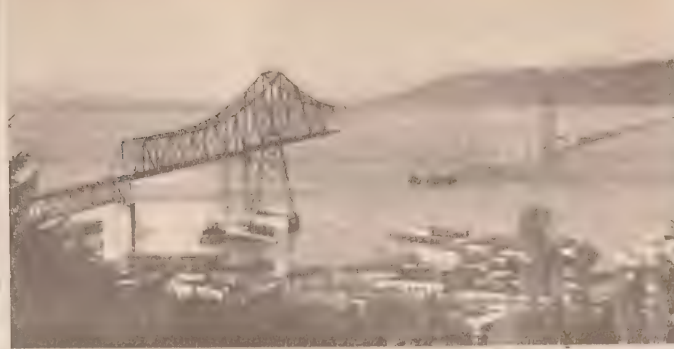
American Bridge Division of US Steel Corporation, the steel contractor on the bridge, moved its tall floating derrick northward across the ship channel Friday to the south end of the Desdemona Sands trestle. Workmen this week will begin laying steel plate girders for the bridge deck from Pier 168, southernmost end of the trestle, to Pier 164. This job will take about two weeks. Then, if material arrives in time, small trusses will



PROGRESS continues on bridge connecting Astoria and Megler, Wash., over Columbia River. It will be one of longest (4.1 miles) continuous truss span series in

world. Journal photo by Jim Vincent shows construction looking from Astoria across to Washington shore.

Steel Work Continues on Astoria Bridge



Almost-finished first section of 264-foot cantilever span of the Astoria bridge reaches out over main channel of the Columbia river, awaiting completion of two more piers (top photo). Cranes on water-level platforms mark unfinished pier locations. Towering stiff-legged derrick of US Steel's American Bridge division raises steel into place for girder spans

at south end of the Desdemona Sands trestle. Lower photo gives closer view of work on girder spans. Girder spans, each 154 feet long, will carry traffic on its upward rise from the two-mile-long catwalkway over Desdemona Sands (left) to the span over the main channel (out of sight at the right). (US Steel Photos)

November 6, 1964

Steel Work On Bridge Ends Soon

American Bridge Division of US Steel Corporation will run out of work on the Astoria Interstate bridge in about four to six weeks, according to James Lattie, field representative of the firm's San Francisco office, who was here this week visiting the job.

Riveting work will last a few more weeks on that portion of the main channel span which has been erected. New construction north of the main channel span, now in progress, will last about the same length of time.

From then on until enough more piers are finished to permit work to resume, the company will concentrate on fabrication work at its Vancouver, Wash., yard. There members will be put together for the north channel span. Parts of this span will be floated down the river by barge, as soon as piers there are ready—probably a few months hence.

It may be six months or longer before work can resume on the main channel span, in the opinion of the steel contractors. Pier 169 must be rebuilt and Pier 168 completed before this can be done. Removal of deficient concrete from the base of Pier 169 was still in progress this week and will continue several weeks before rebuilding the pier can be resumed by Raymond International Corporation.

American Bridge Division officials are concerned because they will have a 40-week construction delay. The company estimates a 200,000

Replacement of Defective Concrete Starts at Pier 169

Replacement of the defective 169 cofferdam of the Astoria bridge began this week, 10 months after DeLong Corporation quit work on the pier.

Raymond International Corporation has completed removal of the top 15 1/2 feet of the 20 1/2 foot thick concrete slab in the downstream cell of the cofferdam, and began putting in new concrete at 12:20 p.m. Wednesday. Pouring of the concrete underwater was scheduled to go on continuously until the job is finished, about 11 p.m. Thursday.

Removal of defective concrete from the upstream cell was still going on, being about 75 per cent complete.

Another Astoria bridge job that started this week was placing of rock rip-rapping around the bases of Piers 164, 165 and 167. Umpqua River Navigation

company, which has this contract, is barging rock from a quarry near Stella, Wash., and there left for Vancouver, Wash., leaving only a couple of watchmen. They will remain there base of each pier. About 2,500 tons of rock will be used around each pier, to stabilize the river bottom there and prevent scour, ready in the spring.

Second shift of the concrete tower of Pier 168 is to be poured next week. All the steel workers of the American Bridge Division crew quarry near Stella, Wash., and there left for Vancouver, Wash., leaving only a couple of watchmen. They will remain there base of each pier. About 2,500 tons of rock will be used around each pier, to stabilize the river bottom there and prevent scour, ready in the spring.

Raymond International Corporation was making necessary repairs to the corner of Pier 169 that was damaged by the freighter Seamar last weekend. To reduce likelihood of further such accidents the company has moored a barge alongside the pier on the channel side, mounting lights and radar reflectors to help ships find their way safely past.

Construction of piers to support the north channel crossing was progressing swiftly this week. Raymond International Corporation placed pre-cast concrete caps on Piers 6 and 17 and at its Tongue Point concrete plant it cast the shells for the base of Pier 14 and the cap for Pier 16. Sills for the base of Pier 8 are ready at Tongue Point and sills for Pier 7 were to be set in place this week.

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NOVEMBER 11, 1964

Bid Offered On Span Job

Project Planned On Columbia

OLYMPIA (AP) — Edmich Co. and De Inc. of Port Angeles, apparent low bid of \$322 Tuesday to build the approach to a bridge over the Columbia River between Astoria, Ore., and Point Ellis, Wash.

The Highways Department, which announced the low bid, said the contract called for building an approach four-tenths of a mile long, including a welded steel girder span.

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June 9, 1966

Highway Agency Accepts Finished Bridge Approach

The Astoria bridge's Astoria approach has been completed, inspected and accepted by the Oregon Highway Department, bridge engineers reported this week.

The approach completion adds a major segment to completed portions of the span. Pacific Concrete company, Portland, was contractor at \$1.2 million for the approach job.

Monday will, if weather permits, see the start of concrete pouring of the last undecked segment of the bridge, the 2464-foot long truss across the main ship channel.

To keep things properly in balance, concrete will be poured from both ends toward the middle. Forms are in place and reinforcing steel was being laid Friday.

Concrete pouring will continue every day through next week and probably into week after next.

Completing the deck will not have the bridge quite ready for traffic, however, as curbs and parapets must be built to make the roadway safe for use. This work will proceed more slowly than the deck construction, engineers said.

Landscaping of the area around the Astoria end of the bridge is progressing at a good pace, engineers reported. The landscaping contractor has until mid-July to finish the job.

Painting has been completed on Spans 9, 10 and 11 near the north end of the bridge, and was in progress on Span 8 this week. Painting of the steel work will continue long after the bridge is otherwise completed.

Date of opening the new state office building at the Astoria end of the bridge is still indefinite, officials said Thursday. Considerable office equipment still needs to be installed before state agencies can move in.

June 14, 1966

Work Begins on Main Channel Span Decking



Laying of concrete deck on the Astoria bridge main channel span began Monday almost at the middle of the bridge. Concrete laying will go on simultaneously on both sides of the middle, working out toward the ends of the span from the middle. Workmen here are laying the first concrete on the south side of the 2464-foot span.

June 16, 1966

Main Span Pouring Begins



The small gasoline engines that power the concrete delivery vehicles from the mixing trucks to the pouring site are just powerful enough to move the small wagons. But, sometimes an additional boost is necessary. Here, a load has just been dumped, and the cart is almost ready to go back for another load.



ALL OF THE MAIN decking was to be poured when this picture was taken. Workmen had started the pouring earlier in the day, and if good weather holds out, they should be done in two weeks.

Concrete Now Being Poured on Main Span

The final pouring of concrete across the main span of the Columbia river bridge started this week. Mixing trucks are bringing concrete to the end of the main span where the mixed concrete is loaded into delivery vehicles which are then driven out to the middle of the main span. Crews are working in the middle spreading the concrete as it is dumped by the delivery vehicles. The main span is being poured from the middle toward both ends at the same time.

It is hoped that the pouring will be completed in two weeks. Adverse weather conditions can slow up the pouring, however, and delay the completion date.

June 22, 1966

Main Truss Deck Near Completion

Concrete decking may be completed Friday on the Astoria bridge's 2464-foot truss across the Columbia river main ship channel.

Robert Ellison, resident bridge engineer, said Wednesday. "If we adhere to our present work schedule, we should be finished by then." Pouring of concrete began June 13 on the last undecked segment of the bridge.

To insure proper balance, the concrete has been poured from the middle toward both ends of the truss. If the final batch of concrete is poured Friday on the undecked section, the bridge still will not be ready for use as curbs and parapets must be added to make the roadway safe.

Paint work on the structural steel on the north side of the river will continue for some time. Work has been hampered at times by poor weather, with rain washing out the paint. Ellison said.

Some equipment and furniture has been set up in the new state office building at the Astoria end of the bridge but state agencies still have no idea when they will be moving to the new location.

Tuesday, June 28, 1966

Straub Inspects Bridge on Visit Here



Astoria visitor Monday was State Treasurer Robert Straub, second from right. Accompanied by Webb Ballinger (far left), assistant project engineer, Straub inspected the Astoria bridge while here. He is flanked by Rep. Bill Holmstrom (second from left) and Sen. Dan Thiel. The Democratic candidate for governor spent Sunday night with his family camping at Fort Stevens State Park. He is on three-day, seven county camping-campaigning tour.

Last Concrete Poured Today for Astoria Bridge



Top photo shows Ellerich and del Guzzi working making the final concrete pour of the Astoria bridge this morning. Concrete parapets were being completed on both sides of the bridge at north end of the main channel

crossing. Lower photo shows some of the lumber and other materials still piled on the bridge, which will form a bottleneck requiring one-way traffic if the bridge is opened Friday. (Daily Astorian Photos)

Traffic Set For Trip On Bridge

A group of Oregon Highway Department officials, headed by assistant state Highway Engineer Tom Edwards, was expected here from Salem this afternoon for discussions with local engineers and contractors.

The conference is expected to have a bearing on the still-unannounced opening to traffic expected Friday morning.

Last concrete was poured on curbs and parapets at north end of the main channel crossing span this morning by Ellerich and del Guzzi, who have the paving sub-contract for this portion of the bridge under American Bridge Division.

So far as could be learned, the highway department still plans to open the bridge Friday morning unless something arises at this afternoon's conference to cause a change.

There is much lumber and other material piled on the bridge, and men will be working there for weeks to come. Traffic, if the bridge opens, will undoubtedly be one-way across the main channel span, no doubt controlled by flagmen.

Pilot Car To Control 1st Traffic

The Astoria bridge will open for one-way controlled traffic Friday at 6 a.m., Rep. William Holmstrom announced this afternoon.

The announcement came after an all-day conference of Highway Department officials and bridge contractors to iron out many problems to make possible use of the bridge while construction work is still in progress.



The first caravan northbound across the Astoria bridge halted near the top of the highest span to permit visiting press representatives from several Northwest newspapers to take

photos. Mayor Harry Steinbock, who rode in the Astoria Clown car that led the parade, stops to chat with pilot car driver. One-way traffic prevailed for a half mile.

The Oregonian

VOL. CVI — \$3.071

11th Street, Astoria, Oregon

FRIDAY, JULY 29, 1966

36 PAGES

PRICE FIVE CENTS

\$24 Million Astoria Bridge Opens Friday



RISING TO take over on the Columbia River, the new Astoria-Megler bridge Thursday was seeing its last "competition" from the ferries that have carried river crossers

since 1871. Tourist No. 3, one of three boats which had been operating recently, makes one of its last crossings before sunset and the end of slow travel on Highway 101.

Bridge was scheduled to open to one-way traffic at 6 a.m. Friday. Ferries will be auctioned off. (Staff photo by Leonard Bacon)

Ferry service will cease to-night.

The one-way traffic will prevail through the construction area, which includes all the half-mile segment across the main ship channel.

A pilot car will convoy traffic through the construction area.

Tolls will be charged starting at 8 a.m.

The one-way traffic conditions will probably continue at least 10 days, Holmstrom said.

Attending the conference today were Tom Edwards, assistant state highway engineer; Al Rear, assistant bridge engineer; Ray Asbury, division highway engineer; Robert Cunningham, resident bridge engineer; Walter Holmstrom and Mel Brannham of American Bridge Division, general contractors; Louis

Ellerich and Dick Hart of Ellerich and Del Guzzi, paving contractors; Andrew Nesheim, painting contractor, and Rep. Holmstrom.

Oregon Highway department engineers went into a huddle this morning with representatives of American Bridge division, the contractor for the main channel crossing span, to try to determine if the bridge can be opened Friday.

Highway department engineers refused to discuss the situation, but apparently the situation is that the department wants to open the bridge and the contractor wants to postpone the opening at least a week.

No change has been made in the police given ferry employees several days ago, that today is their last day of work.

However, a last minute change was still possible that would keep the ferries going a little longer if the bridge opening seems impractical.

Construction work still in progress is the main obstacle to a Friday opening. It will require one-way traffic across the half-mile main channel span, with pilot cars to convoy traffic through.

A traveling magnet brought in by the Highway department removed some of the nails and other metallic rubbish from the bridge deck Wednesday. Bridge workers who have been using the span say there has been a high incidence of flat tires.

Astoria Navigation company officials were going ahead with plans for a farewell-to-the-ferries party for the 52 ferry employees Saturday night aboard one of the boats.

Action Ordered To Ease Pressure On Overworked Ferryboat System

ASTORIA (Special) — The alleviate the two-hour waits here, Astoria bridge across the river will be open to one of the automobile traffic at 8 a.m. three ferries.

Friday, a month in advance of Caravans of automobiles crossing the bridge "will be subject to some delay because of the one way traffic."

The final run of the pilot cars. Toll will be \$1.50 per car.

Decision to open the bridge nostalgic ferry riders left to traffic before final construction Astoria dock at 5 p.m. The highway engineers Thursday, returning from day afternoon following meet Megler at 10:30 p.m. along with contractors' representatives of present and former crewmen who have worked in the opening of the bridge to ferry service here over the highway travel is expected to five decades were aboard.

Riveters 'Sound Off' As Astoria Bridge Nears Completion



RIVETERS David Kyle and Ray Lewis of U.S. Steel Corp.'s American Bridge Division look at work being carried out on Astoria-Megler Bridge, more than 300 feet above the Colum-

bia River. Riveting of bridge's steel structure has been delayed by bad weather but resumed last week and has three more weeks to go before it is finished.



The Bridge

ALL THE STEEL WORK has at last been assembled for the 4.1 mile long, \$24 million Astoria bridge but the task of fastening it together permanently with rivets is still going on. Towering 350 feet above the river, the bridge dominates the Astoria landscape.

Designed for utility and economy, not for beauty, the bridge still has a grace and grandeur of its own.

One of the fascinating sights is that of the iron workers who, despite heavy work clothes, scramble with agility over the steel beams, high in the sky.

They have gradually woven together the vast assembly of pre-fabricated steel beams, amazing local people by the intrepidity with which they defy the awful heights where they work.

Still busy with the final task of riveting the bridge together, they will soon finish and go on to other bridges and steel towers elsewhere in the world.



Main Channel Truss Remains To Be Decked

All concrete deck except that on the 2864-foot main channel truss has now been laid on the Astoria bridge, highway Department engineers said Thursday.

Construction of forms for the main channel deck has progressed steadily in recent weeks and forms are in place for all but about 800 feet of the span.

As soon as the forms are in place, laying of concrete will start at both ends.

Next Tuesday is final day for Pacific Concrete company to complete work on the Astoria approach. The company was nearly done, highway department engineers said Thursday.

Painting of the bridge is in progress and undoubtedly will continue after it is opened to traffic. Construction of fender piling around Pier 169, on the north side of the ship channel, is still to be done but will not be started until deck laying work above it is finished. Fender piling already are in place around Pier 170 on the south side of the channel.

Astoria Bridge Lacks Only Some Concrete, Rails For Completion

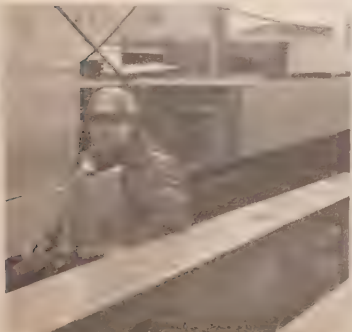
THE OREGONIAN, SATURDAY, MAY 29, 1946



SCHEDULED TO OPEN this summer is the Columbia River Bridge, Astoria, Ore. except for concrete roadways, the bridge spans 21,500 feet between Canada and Mexico. Engineers have constructed the well beyond stress specifications required in this windy



Project Superintendent J. C. McMurray (left foreground) didn't let the closing of only one man with the firing of the steel truss. Right: the steel truss, the main channel structure, the Oregon and American flags if he could have found one. But time and spanning channels couldn't wait for flag finding.



Bridge boss J. C. McMurray, Columbia River bridge project superintendent, has worked at every job in building a bridge from bucking rivers to connecting the massive steel members. He likes to grow flowers for a hobby.

November 18, 1965

Final Deck Beams Laid for Astoria Bridge Approach



Steel Work Finished On 2464-Foot Truss For Astoria Bridge

At the bridge's Washington end, contractors Eltrich and Del...

Division Thursday the contractors hoped to pour concrete for the north half of span 5 and one in line going southward to...

American Bridge Division put the last structural steel in place Wednesday afternoon on the 2464-foot long through truss of the main channel span of the...

Such of the main channel truss is still held together by bolts and pins which must be replaced by rivets. R...

construction of the world's longest through truss, except for riveting work and laying the concrete deck.

The towering derrick barge, used by the contractor to hoist steel 350 feet into the air to reach the two peaks of the half-mile long truss was towed to Tongue Point, its work at the bridge site completed.

The barge will be employed there to put together the prefabricated panels of Span 167, lone remaining portion of the steel bridge structure not yet in place.

Panels for this span were being assembled in Vancouver.

The main channel structure during construction. The panels are due here next week.

To Float Span To Place American Bridge Division hopes to be ready in three weeks to float the span into place. Like most other spans of the bridge, it will be erected on barges at Tongue Point and floated into place at high tide.

Riveters are scarce and American Bridge has not been able to obtain the number of these workmen it would like to have to get the job done quickly.

Concrete Beams Finished

Last pre-stressed concrete beams to support the deck of the south approach to the bridge were put into place this week, Oregon Highway department engineers said. Work of strengthening foundation of one of the bents supporting the approach has been completed. This bent was under possible threat from earth movement on the steep hillside south of W. Marine Drive.

Concrete for deck of seven spans November 23-24. Deck construction on the approach will continue thereafter as fast as forms can be built and concrete poured.

Wednesday, December 8, 1965

Final Span Of Astoria Bridge Barged Into Place



THE SUNDAY OREGONIAN, NOVEMBER 20, 1965



COLUMBIA RIVER BRIDGE at Astoria rises high over the south shipping channel where construction work continues at a rapid pace. Bridge will link Astoria with Megler, Wash. The 4.1-mile structure is now 75 per cent com-

pleted and is slated to open for 1966. An all-winter job will be the pouring of the concrete deck which began this month and placing of rivets in the 2,464-foot long steel truss.

THE OREGONIAN, THURSDAY, DECEMBER 9, 1965



ASTORIA BRIDGE SPAN X, the last of seven spans, was barged into place. At 160 feet, span is the longest in the bridge. It weighs 400 tons, was mounted on barges, which left...

The other spans were also barged into place.



ASTORIA MEGLER bridge, viewed by photographer Les Erdman through what will later become concrete bridge deck. Bridge, at this point above ship channel, is nearly finished.



FROM HIGHEST POINT of superstructure on Astoria-Megler bridge, photographer braved stiff breeze to get this shot of approach ramp winding its way past Astoria homes. Bridge will be completed and opened in late summer of this year.



Motorists descending the Astoria bridge approach will encounter this sign and start fishing for pocket books. Highway department has not yet announced what tolls will cost, however. Erection of traffic signs on and around the bridge approach was in progress this week, but all signs along the highway will be kept covered until the bridge is open. "If a motorist started to follow a sign 'to Washington points' he'd soon hit a dead end," said Project Engineer Robert Ellison. (Daily Astorian Photo by Gordon Clark)

Highway Signs Going Up Around Bridge Approach

Erection of highway signs on and around the Astoria bridge approach this week was a new indication that traffic will be crossing the Columbia river on the \$24 million span next summer.

Signs were being erected by Pacific Concrete company as part of its contract to build the approach at the Astoria end of the bridge.

Signs warning motorists they are approaching the toll gate have been posted, but so far as is known here the highway commission has not yet decided definitely what tolls will be charged.

Highway department engineers here have no information on that subject.

They have yet to lay deck on eight shorter spans of 150 feet each, a distance of 1,200 feet, before reaching the Desdemona Sands viaduct that is already finished.

After finishing the deck north of Desdemona Sands viaduct the contractors will move to the spans south of the viaduct.

When deck is laid on the main channel truss, concrete will be placed from both ends of this long truss toward the middle in order to maintain balanced weight load, Highway department engineers said.

February 22, 1966

South Span to Get Concrete Deck



Workers are laying forms for concrete deck on southernmost span of Astoria bridge. Laying of deck continued on the north spans this week and was nearing completion.

Deck Construction to Begin on South Span of Bridge, Other Work Progresses

Workers this week began putting together forms on the southernmost steel span of the Astoria bridge, preparatory to laying deck.

Deck construction will continue at north end of the bridge, where contractors Eltrich and Del Guzzi have completed the deck on seven long spans of 350 feet each and four short ones of 150 feet each. Only four 150-foot spans remain to be decked at the north end before reaching the Desdemona Sands viaduct. This north-side decking should be finished by end

of next week, Oregon Highway department engineers predicted Monday.

American Bridge division riveting crews have been making steady progress putting in thousands of rivets replacing temporary bolts and pins holding together the steel framework of the bridge. Riveting ought to be finished in April, engineers said, if weather is favorable.

Workers were finishing concrete surfacing and removing forms on the Astoria approach, where only guard rails will remain to be done. Construction of a toll house at Astoria end of the approach and of a new state office building continued steadily. The office building is plastered inside, heating system is installed, and stucco work on the outside will begin this week.

Major work left on the bridge is completion of the concrete deck. Still to be decked are one span of 350 feet at south end of the main channel span, the 246-foot main channel span itself, and eight spans north of

February 7, 1966

Bridge Approach, Completed Steel Structure Shown



Oregon Highway Department supplied this new photo of the Astoria bridge, showing the Astoria approach and the completed steel structure across the main ship channel. The photo was made the day Span 167 was floated into place, completing the steel construction. Barges supporting this span can be seen at left center of picture. (Highway Department Photo)

March 4, 1966

Concrete Decking For N. Channel Crossing Finished

Last concrete decking of the north channel crossing was being poured Friday on the Astoria bridge, project engineer Robert Ellison reported.

The concrete deck across the north channel steel structure is 3600 feet long. Its completion connects the north bridge terminus at Point Ellice, Wash., with the 2.1 mile-long Desdemona Sands viaduct which already is completed.

There is still about a mile of deck to be laid at the southern end of the bridge, including the 2464 foot main channel crossing.

Work on the south end will go faster than on the north end, Ellison said, as weather will be better and the concrete on the main channel truss will be laid from both ends at the same time.

"Our main aim now is to get the deck laid as soon as possible so we can get the bridge open," Ellison said, but he still would not make a definite estimate when this will be. "Maybe in July," he added. Weather is still a factor. Two and a half days were lost this week due to bad weather.

Astoria contractor Roy Duoss began placing stone-studded stucco exterior finish on the new state office building at Astoria end of the bridge and is continuing interior finishing work. The building should be completed near April 1, Ellison estimated.

Clean-up work and removal of forms and false work continue on the Astoria approach, and work continued on the toll gate,

Aerial View of Progress on Bridge Approach



This Oregon Highway Department air photo, looking east along the Astoria waterfront, shows progress of construction of the Astoria bridge approach. Since the photo was taken by Gene Kinney in late September, paving of West Marine

Drive to four lane width has begun, and Astoria contractor Roy Duos has begun building a new state office building in the loop within the bridge approach ramp in lower center of the photo. West End boat basin is in lower left corner.



Rooftops of Astoria's West End are framed by the new concrete bridge approach in this photograph, looking north-

Lower photo shows construction of forms for the concrete deck of the bridge approach along the hill beside Alameda avenue in West Astoria.

east from Alameda avenue. Workmen are constructing wooden forms for pouring concrete deck of the bridge approach.



Paving work on W. Marine Drive was proceeding steadily. Highway Department engineers estimated four full days of work would be enough to finish the job unless weather turns unfavorable. All construction of curbs, gutters and sidewalk was finished this week except for repair of damaged curbs to be done later.

Construction of concrete deck on the approach ramp along the hill north of Alameda avenue also continued steadily this week.

Workmen were pouring footings beside W. Marine Drive for the large steel signs to mark the intersection with the bridge approach.

Four officials of the U.S. Bureau of Public Roads were here this week to conduct a routine inspection of progress on the bridge approach. They were Glen Hossner, Robert Philbury, C.L. Pike and T.F. Laue, all of Portland.



View from the Astoria bridge approach shows the intersection of Columbian and West Marine, shown here, to the Smith Point bridge. (Photos by Daily Astorian)



Massive size of the steel members of the Astoria bridge structure is apparent in this

photo, showing American Bridge Division iron workers hard at work, high above the river.

October 29, 1965



It doesn't look as though the two ends of the unfinished cross-channel span of the Astoria bridge will meet in this photo from the West Astoria hills. The apparent failure to meet correctly is optical illusion, as workmen of American Bridge Division proved Friday when they lifted the final connecting chord into place with complete success.

88-Foot Steel Chord Joins Ends of Span 169



American Bridge Division workmen Friday connected the two projecting ends of Astoria bridge span 169 in the middle, as shown in the three photos above.

The 88-foot steel connecting chord was hoisted into place on the downstream side of the bridge about 4 p.m. by the contractor's towering barge-mounted crane.

Oregon Highway department engineers reported the 88-foot steel chord fitted almost perfectly, within a small fraction of an inch. Jacks were on hand to pull things together if necessary.

The steel construction was probably been exact, engineers laid out to fit perfectly at 63 degrees temperature, engineers said. Temperature when the chord was hoisted from a barge in to its place, 188 feet above the river, workmen had tied a US State flag at the other end. In the middle was a sign bearing the name and emblem of American Bridge Division.

Center photo shows the chord almost in place. Workmen, right hand photo shows the chord in place, with flags flying triumphantly in the west-crossing the connecting link to early breeze.

Gap Closing in Cross-Channel Span for Bridge



Main Span Of Bridge Near Finish

The two wings of the 1232-foot steel span of the Astoria bridge across the main ship channel crept steadily closer together this week.

American Bridge Division had closed the gap by Thursday to four 44-foot "panels" or a total 176 feet.

Highway Department engineers said Thursday that counterweights will have to be hung outside the two supporting piers of the span, Nos. 169 and 170, before the last gap can be closed. Counterweights will probably be blocks of concrete. They will prevent the bridge tipping inward like two teeter-totters.

American Bridge Division of US Steel company, the contractor, was finding difficulty obtaining riveters and this was reportedly slowing progress.

Construction of the concrete deck of the bridge, scheduled to start at the Washington end last week, has been delayed. Concrete pouring for this work is now expected to begin next Monday.

Astoria Lights Form Background for Bridge



Wayne O'Neill of the Chinook Observer took this night photo from Point Ellice, Wash., looking through the steel network of the Columbia river bridge toward

the distant lights of Astoria.



September 7, 1965



The last gap in the Columbia river bridge yet to be completed is the one you see over the Oregon ship channel, and American Steel bridge workers are fast closing this one atop pier 169. The last remaining span open over on the North shore was installed this week.

A black and white photograph showing a large, intricate steel truss bridge. The bridge's structure is composed of numerous vertical and diagonal beams, creating a complex lattice. A small, light-colored building or structure is visible beneath the bridge's main span. The foreground is dark and somewhat indistinct, suggesting a body of water or a flat, dark ground. The overall image has a grainy, historical quality.

Steel span No. 11 of the Astoria bridge was towed down the Columbia Monday night by the tug George Birnie and put into position to cover the 350-foot gap between Piers 11 and 12 of the north channel crossing of the bridge. The span was to be placed on its anchor bolts on the two piers at high tide, at noon. This was the last pier to be pre-assembled at the Vancouver, Wash., plant of American Bridge Division, US Steel corporation, and brought by barge to the bridge site. All future steel work on the bridge will be done at the site. Span 11 completes steel work for the north channel crossing.



Pre-stressed concrete beams to support the deck of the Astoria bridge approach were being placed this week. Built in Portland, the 20,000-pound beams were brought to Astoria by rail and truck. Beam on ground at right was accidentally

Crane Places Bridge Approach Beams

Paving work resumed Monday easily

On West Marine Drive after a delay last week due to rains United Contracting company, the paving contractor, planned to pave the center section of West Marine Drive Monday in the loose steel.

— on that part of the steel before it rains again. The project is slated for later in the day.

Workmen of American Bridge Division, US Steel Corporation, falsework.

The steel used in the falsework consists of units that will be put together to construct Span 167, the assembly to be done on a barge at Tongue Point. The span then will be floated into position to close the last gap in the bridge, except for a 315-ft-long gap remaining for the main span. The gap in the main ship channel. Filling in of this gap is expected to resume within a few days.

Pouring of concrete for the bridge deck began this week at the north end of the bridge. Said Contractors have completed constructing deck forms for nearly three full spans outward from the north shore.

Removal of falsework under the bridge approach crossing of West Marine Drive was in progress this week. Laying of the concrete deck across the street has been limited.

Pre-stressed concrete beams to support deck of the Astoria bridge approach were being dropped into place this week by cranes operated by Pacific Concrete company, approach construction contractor.

Eighty-nine of the big beams, weighing 20,000 pounds, have been placed. Sixty of them have arrived by train and truck so far from Portland and the Ross Island Sand and Gravel company manufactured them.

Pacific Concrete company also worked this week on the approach crossing above W. Marine Drive west of Kingston avenue. A box girder of concrete has been poured, and next week the contractor will pour concrete for the deck slab above this girder.

Construction of curb along north side of W. Marine from Hamburg to Bay streets was nearly done Thursday, only 400 feet at the eastern end remain-

ing to be built. Construction of curb along newly - relocated Kingston avenue and on the filled ramp at the lower end of the bridge approach was also in progress.

United Construction company sub-contractor for paving W. Marine to its new four-lane width, is expected to start work any time.

Eltrich and del Guzzi, who have the sub-contract from American Bridge Division, US Steel Corporation to lay the concrete deck on steel portions of the bridge, have set up a concrete plant at Point Ellice, Wash., the north terminal of the structure.

These contractors have begun form construction starting at the west end of the bridge. It will be completed in 1991 for \$10.5 million.

dropped when it proved too heavy a load for a lighter crane and almost pulled the crane over forward. The driver maneuvered to save the rig and in the process dropped the beam in the wrong spot.

October 11, 1965

Air View Shows Gaps Closing in Astoria Bridge



This September 24 air view of the Astoria Bridge showing only a pair of small gaps still to be closed in the structure was taken by the Oregon Highway Department's travel information division, with Glen Kinney as photographer. American Bridge Division, US Steel Corporation, has now cut the gap in the main channel span to little more than 250 feet.

Overtime Work Pushes Steel Construction



US Steel Corporation worked through Saturday and Sunday putting together steel work for the Astoria bridge main channel crossing, in hopes of beating the weather and getting the gap closed by December. By the end of this week they hope

to have the steel reach to the top of Pier 168, the rectangular tower at left of photo, and then extend construction southward to close the narrowing gap over the main channel. A barge can be seen moving down the ship channel.

High Winds Halt Steel Work On Astoria Span

High winds have halted steel erection on the Astoria bridge since Monday, Oregon Highway Department's engineers reported Wednesday.

Some riveting has been done during lulls in the gale, but conditions have been too risky to permit construction work to continue.

The wind interrupted steel progress in erection of the steel truss both northward and south-

ward from Pier 163. American Bridge Division of US Steel Corporation, the contractor, is eager to have the span across the main ship channel tied together before winter weather sets in.

60 Men At Work

US Steel has about 60 men working on this job, experienced bridge construction men assembled from as far away as Los Angeles and Chicago, but could use more. Skilled men for this high and dangerous work are hard to find.

United Contracting company was setting up its paving plant on Ridge road at Warrenton this week and hopes to start paving the new four-lane width of W. Marine Drive by next Monday,

weather permitting. Curb construction on W. Marine was reported more than 70 per cent complete Tuesday.

All 89 pre-stressed beams to support deck of the bridge approach had been delivered Tuesday and all but 10 of them were in position.

Building Under Construction Dunns and Son, Astoria contracting firm, began work this week on a new state office building inside the curve of the bridge approach at W. Marine Drive. Palmberg Construction completed driving support piling for the structure and forms for the footings were being built. Abrahamsen company has received the plumbing sub-contract.

General Construction company, Portland, had three work barges this week at Pier 170, where it is installing a circle of fender piling, a sub-contract for Raymond International Corporation.

US Steel Corporation iron workers earned overtime pay through the weekend as erection of steel for the main channel crossing of the Astoria bridge continued both Saturday and Sunday.

Oregon Highway Department engineers said US Steel is anxious to get the two ends of the channel crossing tied together by early December and wanted to take advantage of last week-end's fine weather.

The steel now being erected, stretching north and south from Pier 168, is expected to land on top of Pier 168 at the north end by the end of this week. Estimated time for tying the span together at mid-channel remains December 1. However, United Contracting company, which will pave West Marine Drive to its new four-lane width, will start Tuesday, engineers said. Starting date was postponed from Monday. Pavers were cheered by an official prediction that weather will continue fair mostly through this week.

Construction of sidewalk along the north side of West Marine Drive, from Hamburg to Bay streets, will start Monday.

The Highway department has ordered additional footings placed around one of the bents supporting the approach, just south of West Marine Drive and close to the point where the approach crosses that street. There has been some evidence of earth movement in the area, Highway Department engineers said, so the stronger footings are being installed to prevent sliding of the bridge bent.

October 25, 1965



CEMENT WAS POURED on the Marine Drive overpass approach to the trans-Columbia bridge this week. Cloverleaf entrance received a new asphalt surface and is ready for traffic.

October 21, 1965



ANOTHER MILESTONE WAS passed on the Columbia River bridge this week when span being balanced on top of pier 169 was fastened to Pier 168, which begins the roadway over Desdemona Sands.

July 29, 1965

Concrete Poured for Approach Piers



Concrete for piers of Astoria bridge approach was poured by workmen Monday afternoon. Cars were rerouted off Marine

Drive and under partially built approach while huge cement truck and crane lifting the cement canister worked.

Piers Rise for Bridge Approach



Workmen pour concrete for piers of approach to Astoria bridge Wednesday afternoon. Huge piers on West Marine

Drive have risen several feet since early last week when concrete pouring started. (Daily Astorian Photo)

Bridge Approach Under Construction



These two photos show construction of the Astoria approach of the interstate bridge. Top photo shows pier construction at the upper end of the approach. Workmen of Pacific Concrete have built a plank roadway to support construction equipment along the

steep hillside below Alameda avenue. Lower photo shows construction of pier that will support the south end of the crossing of West Marine Drive west of Kingston avenue. Forms and reinforcing steel are shown in place.

Bridge Construction Equipment in Use



This photo, looking north from Pier 169 of the Astoria bridge, shows a welter of construction equipment. The concrete tower at right background is Pier 168. In front of it, rising out of the picture, is American Bridge Division's 100-foot high barge-mounted crane, which is being used to erect falsework bents

that will support steel construction between Piers 168 and 169. Steel members of this bent can be seen sticking up out of the water in front of the crane. Foreground shows a barge with equipment used in completing the concrete base of Pier 169. Last concrete was poured there Wednesday.

THE DAILY ASTORIAN

July 30, 1965

Important Step Forward

Pouring of the last concrete on Pier 169 of the Astoria bridge was a significant milestone in construction of the great Columbia river span.

Not only did this wind up the work of Raymond International, contractor for pier construction, but it was successful completion of a pier that broke the contract of DeLong Corporation, Raymond's predecessor.

This is the pier in which the now-famous defective concrete base, or seal, was poured. Controversy over this and over the scouring of river bottom away from around the pier base, led to ter-

mination of the DeLong contract and litigation over responsibility for the defective concrete which is still in the courts.

The troubles over Pier 169 set the whole bridge job back a full year and added at least two million dollars, perhaps more to the structure's cost. For a time people feared perhaps the bridge never would be finished. But Pier 169 is now completed, except for its steel superstructure, and it seems solid enough to support the bridge. It begins to look as though the bridge really will be finished some day not too far away.

Final Concrete Poured for Span Piers

August 27, 1965



Raymond International Corporation completed its Astoria bridge pier-building task Wednesday, pouring the last concrete for the base of Pier 168. Upper photo shows a bucket of concrete being put into position over a round corner post on the pier base. Lower photo shows the northwest corner of the base, with workmen, scaffolding, cranes, and other equipment. The steel tower on the pier will rise on the pier to a height of 190 feet above

the river. The slanting steel rods will tie the steel tower to the base plate, which is anchored 21 feet deep into the round concrete corner posts. The four corner posts go to the pier foundation on the river bottom. Raymond International workmen hoisted a red flag on the pier late Wednesday to celebrate completion of the job. American Bridge Division is expected to start erecting the first portion of the pier Monday. Also see picture Page 2. (Daily Astorian Photo)

1st Steel Placed Atop Pier 169

August 27, 1965



First steel members for the north half of the main ship channel crossing span were put in place this week on top of Pier 169, as shown here. The steel work will spread outward both directions from the top of the tower on the

pier. American Bridge Division's 400-foot high barge-mounted crane is shown beyond Pier 169, and at left is a falsework bent that will support the steel work as it extends from Pier 169 northward toward Pier 168.

August 12, 1965

Steel Tower in Place on Pier 169



Steel tower for Pier 169, same type as placed on Pier 170, is up, with work on main span to begin in near future. Work will

extend outward from both directions of the tower with span expected to be connected in place by late December.

August 25, 1965

Construction Of Truss Under Way

American Bridge Division, US Steel Corporation, Tuesday began erecting the northern half of the 2464-foot steel truss that will carry vehicle traffic over the main channel of the Columbia river some time next year. Workmen began erecting steel on the peak of Pier 169, recently completed.

The southern half of the main channel crossing has been completed, but the north half has been waiting completion of Piers 168 and 169, both now finished.

Highway Department engineers estimated that American Bridge Division may complete the channel crossing truss this fall.

It will be a continuous through truss, 2464 feet long and claimed by the US Bureau of Public Roads as the longest continuous through truss in the world. It will extend from Pier 168, north of the channel, to Pier 171 just north of W Marine Drive in Astoria. It will carry the bridge roadway to a height of 198 feet over the center of the channel.

American Bridge Division workmen will push the steel fabric of the truss both directions from Pier 169. A temporary falsework bent just north of the truss will help support the work during construction.

American Bridge Division workmen also this week were placing five flat steel deck girder spans on the southern part of the north channel crossing. These spans were barged down river from American Bridge's Vancouver, Wash., assembly plant this week, along with Span 10, a truss type span that was put into position at high tide Tuesday.

Work to Start Soon on Curbs For W. Marine

Work on curbs for the new four-lane highway on the west side of the Columbia river will start soon, according to the American Bridge Division. The curbs will be built on the river bottom, and will be about 10 feet high. The curbs will be built on the river bottom, and will be about 10 feet high. The curbs will be built on the river bottom, and will be about 10 feet high.

Four-lane work finished before the fall rains.

Other bridge work was progressing satisfactorily, Ellison reported.

American Bridge Division of US Steel company, which has the steel work contract for the bridge, has sub-let the work of laying concrete deck on steel sections of the bridge to Electric-Guzzi Portland. This firm will begin putting up forms and other preparatory work next week at the north end and will start by October 1 pouring concrete for the deck of the north channel crossing.

All steel spans for this crossing were in place this week except one. No. 11, a 330-foot steel truss span being assembled at Vancouver, Wash. This span will be floated downriver and into place next week, the last such span to be built in Vancouver and barged to the bridge site.

American Bridge division continued to erect steel for the north half of the main channel crossing, and has spread the steel truss from Pier 169 to a falsework bent just north of it.

General Construction, Portland, began putting down piling for a treated timber pile trestle around Pier 170, just off the Astoria shore. The company later will build a similar trestle around Pier 169. These two piers flank the main ship channel and are most vulnerable to collision with ships.

THE OREGONIAN, SATURDAY, JULY 10, 1965

Astoria Span Project Will Open In 1966

MAIN SPAN of the Astoria Bridge (right) looms in foreground as it patiently awaits its connection with the mid-Columbia viaduct. Officials estimate that 35 per cent of the steel part of the total \$21.5 million contract has been completed.



July 9, 1965

Pier 169 Under Construction

This telephoto shows wooden forms for the 20 by 120 foot concrete box girder of Astoria bridge Pier 169, just north of the ship channel. Concrete mixing plant is on the barge at left, and a crane is shown lowering a bucket of concrete for

walls of the girder. The round corners of the forms are upward projections of the four posts that rest on the pier base on the river bottom. The rectangular girder will support a steel tower to carry the bridge roadway.

July 14, 1965

Crane to Build Falsework Bent At Piers 168-169

American Bridge Division, US Steel Corporation, has moved its towering 400-foot high barge-mounted crane to a point north of the ship channel to erect a falsework bent for the Astoria bridge.

The bent will rise between Piers 168 and 169 and will be similar to one that was used on the Astoria shore, between Piers 170 and 171, to support the southern end of the main channel crossing truss while under construction.

The new bent will support the north part of the 2664-foot long truss, as it starts out from Pier 168 to meet the southern half in mid-channel.

This work cannot begin until Raymond International Corporation finishes building Pier 129. Construction of the concrete box girder base of this pier is expected to be finished by mid-August, when American Bridge can start putting up the steel tower of the pier.

Raymond International may complete its entire \$5.7 million pier construction contract by mid-August, project bridge engineer Robert Ellison of Oregon Highway Department estimated Wednesday. Raymond is putting up superstructures of piers on the north channel crossing quite rapidly and should have all 16 piers of that area finished by mid-August, Ellison estimated. Raymond will still have piling and timber fenders to construct around the bases of Piers 168 and 170, the two piers that flank the main ship channel. These circular fenders are to protect the piers from passing navigation.

Bridge Job Contractors Progressing

Progress on Astoria bridge construction continued steadily this week, project engineer Robert Ellison of Oregon Highway Department reported.

Raymond International company prepared to pour concrete for the top slab of Pier 169's huge box girder Thursday. This girder rises above the river surface and will be base for a steel tower. Concrete supports for base plate of the steel will remain to be poured as soon as the girder is complete.

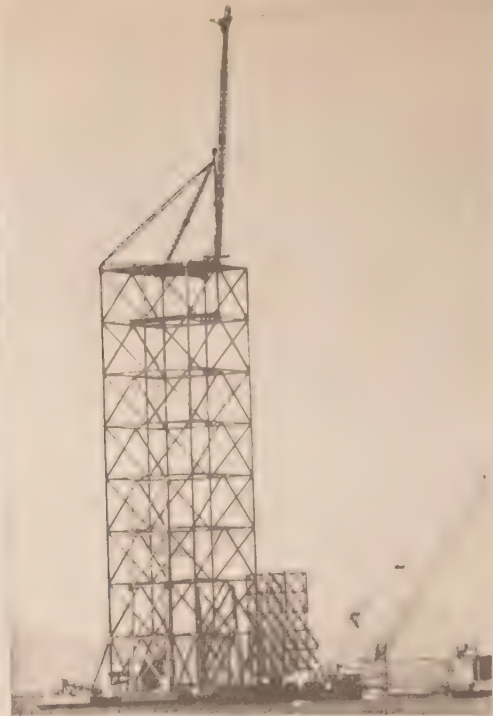
"We expect Raymond to complete all their concrete work by the end of July," Ellison predicted. This will include Pier 169 and the top portions of a few remaining unfinished piers of the 18 that will support the bridge over the north channel of the Columbia.

Pomeroy and Gerwick, contractors on Desdemona Sands viaduct, continued painting and clean-up work this week. They have finished all construction.

Pacific Concrete company continued construction of piers for the Astoria approach. Six piers are now finished at upper end of the approach; two at lower end. Ten more are to be completed. Deck has been laid across two piers at the upper end.

July 16, 1965

Crane Building Framework for Truss



American Bridge Division, US Steel Corporation, has moved its big barge-mounted crane to the north side of the ship channel, where it is shown building a steel framework to support construction of the north part of the cross-channel steel truss of the Astoria bridge. Unfinished Pier 169 is at right. Framework of the temporary bent can be seen.

July 23, 1965

Raymond Completes North Piers

Raymond International Corporation has completed construction of the north piers of the Astoria bridge. The company's main job is to build the bridge.

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A BRIDGE stretches from distant Point Ellice on the side of the Columbia. State officials report that constructing "smooth as silk" and bridge should be open for use in the early summer of 1966. Meanwhile, U.S. Steel Bridge Division workers will be occupied in putting up a 2,000-foot span to fill the gap in the interstate tie of U.S. 101. (Staff Photos by Von Wald)



The Daily Astorian 1965

US Steel Extending Main Channel Span



US Steel Corporation has been extending the long main channel span of the Astoria bridge closer to the mid-point the past few days. The company has been using its towering barge-mounted crane to hang steel members in place for bolting to the span. This span will be 1232 feet from Pier 170 to 169. At mid-point of the channel its deck will be 188 feet above river level. Its north half will be built when Pier 169 is finished.

Astoria's Big Bridge Reaches 76 Per Cent Completion Mark



STANDING STARKLY against brilliant background of sun-filled sky, Astoria's unfinished Columbia River Bridge towers nearly 300 feet above Coast Guard boat. Massive steel structure juts out into air on southern end of 4.4-mile long bridge. Astoria's downtown section lies

right of bridge. Steel spans are prefabricated in Vancouver, Wash., by American Bridge Division of the U.S. Steel Corp., and then barged to the bridge site. Bridge is expected to be an Oregon tourist attraction when completed in late 1966. (Staff Photos by Dave Falconer)

May 20, 1965

Contractors Finish Concrete Deck for Viaduct



Workmen of Pomeroy and Gerwick contractors Wednesday completed pouring the concrete deck of the 11,200-foot-long Desdemona Sands viaduct, central portion of the Astoria Bridge. The picture looks toward the Washington shore end of the viaduct, where it ties into a steel structure across the north channel. The contractors started laying the concrete

deck May 1, 1964. With supporting beams, curbs and parapet, the deck contains upwards of 14,000 cubic yards of concrete. The trestle consists of 110 spans, each 80 feet long, supported on 139 piers each composed of three concrete pilings. Curbs and parapet of the viaduct are still only half finished, and it will take the contractors well into the summer to finish them.

Span 165 Ready to Go in Place on Piers



Span 165 of the Astoria bridge came downriver from Vancouver, Wash., Friday on barges and was to be floated into position at high tide about 2 p.m. Friday. This telephoto shows the span being maneuvered into position. It will extend southward from Span 164, shown in the photo. The span is 351 feet long, weighs 380 tons and will carry the roadway on its top. Its high end will be 116 feet above the river. Unfinished Pier 168 appears at left of the above telephoto. Span 166, next to

be constructed by American Bridge Division of US Steel, reportedly will be fabricated at Tongue Point, not Vancouver. It will stretch from Piers 164 to 167, shown in the photo as next two northward from Pier 168. It will have to be assembled on a falsework structure high enough to position it between these two piers, so high that the barge voyage from Vancouver will be risky. Its high end will rise 136 feet above the river. (Daily Astorian Photo)

May 20, 1965

Bridge Construction 'On Downhill Pull', Engineer Reports

"We're on a downhill pull 20 and 5-9 inclusive. Nos. 9, 10, 11, 12, 13, 14, 15, 16, 17, 18, 19, 20, 21, 22, 23, 24, 25, 26, 27, 28, 29, 30, 31, 32, 33, 34, 35, 36, 37, 38, 39, 40, 41, 42, 43, 44, 45, 46, 47, 48, 49, 50, 51, 52, 53, 54, 55, 56, 57, 58, 59, 60, 61, 62, 63, 64, 65, 66, 67, 68, 69, 70, 71, 72, 73, 74, 75, 76, 77, 78, 79, 80, 81, 82, 83, 84, 85, 86, 87, 88, 89, 90, 91, 92, 93, 94, 95, 96, 97, 98, 99, 100, 101, 102, 103, 104, 105, 106, 107, 108, 109, 110, 111, 112, 113, 114, 115, 116, 117, 118, 119, 120, 121, 122, 123, 124, 125, 126, 127, 128, 129, 130, 131, 132, 133, 134, 135, 136, 137, 138, 139, 140, 141, 142, 143, 144, 145, 146, 147, 148, 149, 150, 151, 152, 153, 154, 155, 156, 157, 158, 159, 160, 161, 162, 163, 164, 165, 166, 167, 168, 169, 170, 171, 172, 173, 174, 175, 176, 177, 178, 179, 180, 181, 182, 183, 184, 185, 186, 187, 188, 189, 190, 191, 192, 193, 194, 195, 196, 197, 198, 199, 200, 201, 202, 203, 204, 205, 206, 207, 208, 209, 210, 211, 212, 213, 214, 215, 216, 217, 218, 219, 220, 221, 222, 223, 224, 225, 226, 227, 228, 229, 230, 231, 232, 233, 234, 235, 236, 237, 238, 239, 240, 241, 242, 243, 244, 245, 246, 247, 248, 249, 250, 251, 252, 253, 254, 255, 256, 257, 258, 259, 260, 261, 262, 263, 264, 265, 266, 267, 268, 269, 270, 271, 272, 273, 274, 275, 276, 277, 278, 279, 280, 281, 282, 283, 284, 285, 286, 287, 288, 289, 290, 291, 292, 293, 294, 295, 296, 297, 298, 299, 300, 301, 302, 303, 304, 305, 306, 307, 308, 309, 310, 311, 312, 313, 314, 315, 316, 317, 318, 319, 320, 321, 322, 323, 324, 325, 326, 327, 328, 329, 330, 331, 332, 333, 334, 335, 336, 337, 338, 339, 340, 341, 342, 343, 344, 345, 346, 347, 348, 349, 350, 351, 352, 353, 354, 355, 356, 357, 358, 359, 360, 361, 362, 363, 364, 365, 366, 367, 368, 369, 370, 371, 372, 373, 374, 375, 376, 377, 378, 379, 380, 381, 382, 383, 384, 385, 386, 387, 388, 389, 390, 391, 392, 393, 394, 395, 396, 397, 398, 399, 400, 401, 402, 403, 404, 405, 406, 407, 408, 409, 410, 411, 412, 413, 414, 415, 416, 417, 418, 419, 420, 421, 422, 423, 424, 425, 426, 427, 428, 429, 430, 431, 432, 433, 434, 435, 436, 437, 438, 439, 440, 441, 442, 443, 444, 445, 446, 447, 448, 449, 450, 451, 452, 453, 454, 455, 456, 457, 458, 459, 460, 461, 462, 463, 464, 465, 466, 467, 468, 469, 470, 471, 472, 473, 474, 475, 476, 477, 478, 479, 480, 481, 482, 483, 484, 485, 486, 487, 488, 489, 490, 491, 492, 493, 494, 495, 496, 497, 498, 499, 500, 501, 502, 503, 504, 505, 506, 507, 508, 509, 510, 511, 512, 513, 514, 515, 516, 517, 518, 519, 520, 521, 522, 523, 524, 525, 526, 527, 528, 529, 530, 531, 532, 533, 534, 535, 536, 537, 538, 539, 540, 541, 542, 543, 544, 545, 546, 547, 548, 549, 550, 551, 552, 553, 554, 555, 556, 557, 558, 559, 560, 561, 562, 563, 564, 565, 566, 567, 568, 569, 570, 571, 572, 573, 574, 575, 576, 577, 578, 579, 580, 581, 582, 583, 584, 585, 586, 587, 588, 589, 590, 591, 592, 593, 594, 595, 596, 597, 598, 599, 600, 601, 602, 603, 604, 605, 606, 607, 608, 609, 610, 611, 612, 613, 614, 615, 616, 617, 618, 619, 620, 621, 622, 623, 624, 625, 626, 627, 628, 629, 630, 631, 632, 633, 634, 635, 636, 637, 638, 639, 640, 641, 642, 643, 644, 645, 646, 647, 648, 649, 650, 651, 652, 653, 654, 655, 656, 657, 658, 659, 660, 661, 662, 663, 664, 665, 666, 667, 668, 669, 670, 671, 672, 673, 674, 675, 676, 677, 678, 679, 680, 681, 682, 683, 684, 685, 686, 687, 688, 689, 690, 691, 692, 693, 694, 695, 696, 697, 698, 699, 700, 701, 702, 703, 704, 705, 706, 707, 708, 709, 710, 711, 712, 713, 714, 715, 716, 717, 718, 719, 720, 721, 722, 723, 724, 725, 726, 727, 728, 729, 730, 731, 732, 733, 734, 735, 736, 737, 738, 739, 740, 741, 742, 743, 744, 745, 746, 747, 748, 749, 750, 751, 752, 753, 754, 755, 756, 757, 758, 759, 760, 761, 762, 763, 764, 765, 766, 767, 768, 769, 770, 771, 772, 773, 774, 775, 776, 777, 778, 779, 780, 781, 782, 783, 784, 785, 786, 787, 788, 789, 790, 791, 792, 793, 794, 795, 796, 797, 798, 799, 800, 801, 802, 803, 804, 805, 806, 807, 808, 809, 810, 811, 812, 813, 814, 815, 816, 817, 818, 819, 820, 821, 822, 823, 824, 825, 826, 827, 828, 829, 830, 831, 832, 833, 834, 835, 836, 837, 838, 839, 840, 841, 842, 843, 844, 845, 846, 847, 848, 849, 850, 851, 852, 853, 854, 855, 856, 857, 858, 859, 860, 861, 862, 863, 864, 865, 866, 867, 868, 869, 870, 871, 872, 873, 874, 875, 876, 877, 878, 879, 880, 881, 882, 883, 884, 885, 886, 887, 888, 889, 890, 891, 892, 893, 894, 895, 896, 897, 898, 899, 900, 901, 902, 903, 904, 905, 906, 907, 908, 909, 910, 911, 912, 913, 914, 915, 916, 917, 918, 919, 920, 921, 922, 923, 924, 925, 926, 927, 928, 929, 930, 931, 932, 933, 934, 935, 936, 937, 938, 939, 940, 941, 942, 943, 944, 945, 946, 947, 948, 949, 950, 951, 952, 953, 954, 955, 956, 957, 958, 959, 960, 961, 962, 963, 964, 965, 966, 967, 968, 969, 970, 971, 972, 973, 974, 975, 976, 977, 978, 979, 980, 981, 982, 983, 984, 985, 986, 987, 988, 989, 990, 991, 992, 993, 994, 995, 996, 997, 998, 999, 1000.

Each Pier 108 is being completed by July 1," Ellison said. "Pier 109 will take more time. It is the one where work had to be backed up and started over again. Removal of steel trusses was contemplated this week and deck of Spans 175 and 176 at the upper end of the approach, and is building forms for a box girder that will span W. Marine Drive at the end of the approach.

"Next week Span 167 now being assembled by US Steel Corporation at Tongue Point, is expected to be floated to its position north of the main channel

Raymond International, the pier contractor, now has only five unfinished piers of the north shore crossing, plus Nos. 168 and 169 of the main channel

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Span 166 Takes Shape at Tongue Pt.

June 11, 1965
1, May 25, 1965



Workers of US Steel's American Bridge Division have begun assembling Span 166 of the Astoria bridge at Tongue Point. The span is at right, starting to take shape on top of falsework that will position it to be floated

into position. The towering crane at left is the same one that was used to build the main channel crossing span last year. It has been moored at Tongue Point all winter, and is being used to build Span 166.

Span 166 Floated into Place

June 7, 1965



front of the span end at left is a jacking barge alongside Pier 169. American Bridge division now will return to Vancouver, Wash., and start assembling Span 7, one of the steel spans for the north channel crossing. Span 166 is about 250 feet long, towers 138 feet above river level at its high end, and weighs 1400 tons. It is a deck truss, carrying the roadway on its top. (Don Roberts Photo)

Contractors Move Falsework Bent for Pier 168-169 Job

Steel contractors for the Astoria bridge have begun taking a steel falsework bent between Piers 170 and 171 of the Astoria bridge, just off the Oregon shore.

This bent was used last year in building the 616-foot steel span between the two piers. It will be transferred to a point between Piers 168 and 169, on the north side of the ship channel and re-erected on the river bottom to support the steel span between those piers during construction.

American Bridge Division, U.S. Steel Corporation, the steel work contractor for the bridge, brought its towering barge-mounted crane from Tongue Point to the bridge site this week to dismantle and move the

To Support Span
It will perform a similar function as Piers 168-169 are spanned and the steel creeps out southward from 169 to join the network projecting northward from 170 out over the channel.

When all this steel work is finally put together, some time next year, it will be the longest through bridge truss in the world, stretching 2464 feet from Pier 171 on the Astoria shore to Pier 168, on the south edge of Desdemona Sands.

Piers 168 and 169 are still unfinished. Pier 168, a rectangular block of concrete rising from the river, was nearly done this week. One more concrete "pour" scheduled next week will complete it. Pier 169's four posts now rise above the river.

Construction of falsework to support concrete forms for a box girder on top of these posts was in progress this week. The concrete pouring for Pier 169 is scheduled to be done in mid-July, according to Highway Department engineers. Then a steel tower will be built on it, the twin of that on Pier 170 by the Astoria shore. When this is done, the pier will be completed.

May Finish by July
Raymond International, Inc., which has the pier-building con-

tract, also has four piers to finish of the 16 that will carry the bridge across Blind channel along the Washington shore. The contractor has been making steady progress on these.

Highway department engineers are hopeful that Raymond can finish its task by the end of July, terminating a pier-building project started in February 1962 by DeLong Corporation.

Another contractor nearly finished is Pomeroy-Gerwick, now pouring concrete curb and walk along the Desdemona Sands viaduct and putting up guard rail July 1 is target date to finish the concrete work.

Danforth to Leave
Pacific Concrete company continued steady progress on construction of the Astoria approach this week.

George Danforth, Highway department project engineer supervising this contract, will be transferred to Tillamook July 1 and duties of his office will be absorbed by the bridge project engineer's staff headed by Robert Ellison.

This agency was looking for new office space this week, because the present quarters in an old residence at Kingston and West Marine must go to make way for construction of the toll house for the toll gate. Grunstad and Vanderveldt, Astoria contractors, were starting grading and filling for foundation of this structure this week.

Web Hallinger, assistant project engineer, said Thursday that search for a new office has so far been unsuccessful.

June 30, 1965

Last Shells For Bridge Completed

The last pair of concrete shells for the Astoria bridge piers were cast at Tongue Point and delivered to Pier 12 near the bridge's north end this week.

This was the 16th pair of these concrete bell-shaped shells to be placed for the North Channel crossing just off the Washington shore. In addition, shells were used as bases for eight northernmost piers of the main ship channel crossing.

The pre-cast concrete cap for Pier 12 was to be delivered to the site Friday, this being the last of these pre-cast pier members to be made at the Tongue Point site.

American Bridge Division of U.S. Steel Corporation was extending the steel work of the main channel span northward this week. It will be built out to the mid-point of the 1232 foot distance between Piers 170 and 169, then the contractor will wait for completion of Pier 169 before the span can be completed.

The base slab of a rectangular box girder that will stand just above river level on Pier 169 was poured this week.

Bridge Approach to Cross W. Marine at Kingston



Construction of a second crossing of West Marine Drive by the Astoria bridge approach is in progress west of Kingston avenue, where the approach drops down to ground level. This photo shows where the approach takes off from a fill, to cross West Marine. The pier at right will be in the middle of West Marine when the street is widened to four lanes. Excavation of the bank on the south side of West Marine for another pier is now going on. (Don Roberts Photo)



- 1) When quitting time comes, the men on the bridge aren't choosy about which way to go, as long as it's down. This particular worker isn't travelling over any well beaten path as he gingerly steps down the beam high above the Columbia.
- 2) A derrick lifts some of the huge reinforced concrete beams that are being used on the Oregon shore.
- 3) This construction worker is standing above, and examining the expansion joint that allows for the expansion and contraction of the bridge during changes in temperature.
- 4) Looking east the downtown section of Astoria is dwarfed from our vantage point on the Bridge.
- 5) Below the Bridge, the falsework is being extracted from the river in a manner very similar to the way it was put in. The beams are being actually pounded out from the bottom up by the use of a mechanism that hooks onto the top of the beam and starts pounding up.
- 6) "Tex" Denton, heater, has a white hot rivet in his tong which he is able to throw a considerable distance and with real accuracy. The machine to Tex's immediate right is a device for hurling hot rivets up to the top of the bridge.
- 7) There he is again. This is the same worker that appears in picture no. 1 and he's still taking short cuts.
- 8) R. D. Hutchinson catches a very hot piece of metal when he scoops up rivets that are thrown to him by the Heater. He uses a funnel for a catch glove, and when the rivet hits, the sparks fly.



Cement work on pier 165 has reached 43 feet above water level. The forms used in pouring cement can be seen in place as well as the hoppers through which the cement is poured.

April 7, 1965

Bridge Piers 168, 169 Taking Form



Pier 168 of the Astoria bridge now towers 53 feet above the surface of the Columbia river, and will rise twice as high when it is finished. Wooden forms are seen around the top of the pier. A "lift" has been poured inside these forms. The framework on top of the pier will be used to hoist the

forms higher, so the next lift of the concrete tower can be poured. As soon as this pier and No. 169, next south, are finished, late this summer, placing of steel in the main channel span can be resumed. It was stopped last fall with the channel only half spanned.

April 7, 1965

Rebuilding of Pier 169 Under Way After Long Delay



Rebuilding of pier 169 is under way after a long delay while defective concrete was removed from underwater seals at the bottoms of the two steel cofferdams. Here is a scene in the downstream cofferdam, where a new seal has been placed, the water has been pumped

out, and concrete is being placed preparatory to pouring concrete for the four pillars that will rise to the river surface. (More pictures on Page 8.) Daily Astorian Photo



169 of the Astoria bridge. The old concrete seal across the base, on the river bottom 65 feet down, has been slowly and laboriously removed, a new seal has been poured, water has

been pumped out and workmen are cleaning rocks and rubbish off the top of the concrete slab of the seal, preparatory to starting work on the pier. Steel braces which strengthen the cofferdam walls against pressure of the river can be seen.



These workmen are deep below the surface of the Columbia river, working in the downstream cell of the cofferdam of Pier 169 of

the Astoria bridge. Reinforcing steel is being placed for one of four circular concrete pillars of the pier.

April 15, 1965

Span Said 69 Per Cent Complete

The Astoria bridge was 69 per cent complete this week, measured by payments to contractors, according to statistics compiled by Oregon Highway Department bridge engineers.

Of the \$24.5 million original allocation for the bridge, \$17.0 million or 69 per cent has been paid out so far to contractors.

Engineers said this is a reasonably accurate measure of the percentage completion of actual construction, and that construction may be a bit ahead of the percentage based on payment.

Engineers are still estimating late summer or early fall 1965 as completion time for the bridge.

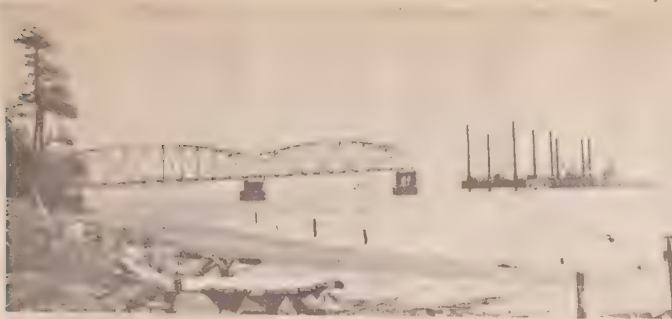
Pomeroy and Gerwick, contractors on the Desdemona Sands viaduct, are nearest to finishing their job. Engineers estimated the viaduct 94 per cent done this week. They have time more concrete deck slabs, of 160 feet each to pour, and that will be all the deck for the 2.1 mile viaduct. Deck pouring will be done by mid-May, it is estimated. Then the contractors will spend the summer compacting guard railing and curbs, and cleaning up.

Raymond International is 56 per cent done on its contract to finish DeLong Corporation's unfinished job, which was 48 per cent complete when DeLong gave up the work. Thus Raymond has the complete pier-building job 77 per cent finished. Raymond has completed 14 of 16 piers on the south channel crossing, 8 of 16 on the north channel crossing.

American Bridge Division U.S. Steel has its work half done, including pre-fabrication of steel bridge spans in Vancouver, Wash. Toward the end of the month it is expected to finish Span 8 from Vancouver to the bridge site, this span to reach from Pier 6 to 7. Pier 7, still under construction, will be finished April 20, engineers predicted.

Pacific Concrete, latest contractor to start work, has done 14 per cent of its \$13 million Astoria approach contract. This contractor last week poured concrete for Piers 176 and 177 and is now preparing to pour concrete for a box girder from Piers 175 to 177.

Steel Span Tops Piers; Approach Work Under Way



Second span of Astoria-Megler bridge on the Washington side was put in place Monday morning (top photo). Work on the

Washington approach (lower photo) started last week. Grading was under way. (Daily Astorian Photo)



Span 6 Of Bridge In Place

Span 6 of the Astoria bridge floated into position at high tide Monday and was dropped with no difficulty into place as the tide receded.

This was the third steel span of the bridge to be fabricated in Vancouver, floated to the bridge site on a falsework structure on two barges, and put into place at high tide.

Span 6 is next south from Span 5, which was placed more than a month ago and is the first span southward from the Washington shore.

Span 6 is 351 feet long and weighs 380 tons. It is a through or "camelback" truss.

American Bridge Division of US Steel will next bring Span 7 in three to four weeks from Vancouver in pre-fabricated form. This span, extending from Pier 164 to 165, will extend the Desdemona Sands viaduct southwards and upwards toward the ship channel crossing. It is a deck truss, similar to Span 164 which was placed recently just to the north of Span 165's location. It also will weigh about 380 tons and is 351 feet long.

Meanwhile other work on the bridge has been progressing steadily this week. Pier 168 is now up to 18 feet above low water and concrete will be poured this week to put it up to 72 feet elevation. Eventually it will tower 116 feet above the river.

At Pier 169, rebuilding work was making good headway this week. Concrete columns in the downstream cofferdam have been built up to 4 feet above river level. In the upstream cofferdam, two concrete steps of the footing slab have been poured, with one more step to be poured before construction of the two round columns will begin.

Pacific Concrete company this week was pouring concrete for a box girder to support roadway of the bridge approach between Piers 175 and 177, and was driving piling for footings for the piers to carry the bridge across W. Marine Drive and into the approach fill that has been built north of that street.



LOOKING NORTH toward Washington side, is telescopic view of Astoria bridge taken from hillside behind steel spans on Astoria side of bridge. The 2.1 mile viaduct in the middle of the bridge is nearly completed. At right, is shown a section of

this viaduct which stands on sections of three pilings that are driven down to 280 feet below sea level. The viaduct section is roughly 30 feet above water while the highest steel span of the bridge is more than 300 feet tall on the east side.



Pier 170, twin of Pier 169 on the south side of the ship channel, is shown here. The concrete girder tying together four columns on

this pier is identical with the one to be built on Pier 169. It is 129 by 60 feet and 25 feet thick. Construction of it will begin next week.

March 22, 1965

Work Under Way on North Approach to Bridge



This sketch of the north approach to the Astoria-Megler bridge was prepared for the Astoria by Chas. W. Goodfellow, Washington Department of Highways Public Information graphic artist. Portland contractor J. N. Conley, Inc., has the contract for approach and excavation work already in progress. Cost of construction is \$258,353 and the schedule calls for completion in 155 working days. A three-lane highway will be constructed at Point Ellice, with two lanes for through traffic and the third lane serving traffic to and from the bridge.

The built-in will be cut away so that the centerline of the new highway will be located at a point near the inside edge of the present highway. The new route will be one-half mile long. The roadway will be raised approximately four feet. The approach will include a fill of 113 feet extending toward the bridge. A span will then connect with the steel bridge at Pier 5. The steel structure, which was set in place two weeks ago, is shown in the lower right corner of the drawing.

March 30, 1965



Looking toward Astoria shows southern end of trans-Columbia steel span jutting out from Pier 170. When Piers 169 and 168 are joined to this to carry bridge across main

ship channel. Street at far right is Kingston avenue, which will be blocked by bridge approach. Next street left is new route of Kingston. Also see photo Page 6. (Gene Kinney Photo)

March 30, 1965

Aerial View Shows Viaduct, Bridge Piers



This is one of the Oregon Highway department's latest aerial photos of the Astoria bridge, showing the Desdemona Sands viaduct nearly complete and barges moored at the sites of

Piers 168 and 169, where work has been progressing steadily. The photo was taken March 4 by Gene Kinney, chief photographer for the Oregon Highway Department's Travel division.

Span 164 Of Astoria Bridge Goes In Place Between Piers

April 2, 1965

Span 164 of the Astoria bridge was dropped successfully into position between Piers 164 and 165 Thursday afternoon at high tide.

Highway Department engineers reported the transfer of the span from its barge support to the piers was accomplished smoothly and with no difficulty.

Resting on false work built up on two barges to the approximate height of its two support piers, the steel span was floated here from Vancouver, Wash.

Weather conditions favored placing the span Thursday, as the wind was light and the river was smooth.

Lines attached the four corners of the span to the proper piers and were tightened or loosened as needed to position the span above the anchor bolts on the piers. Then as the tide receded the span dropped down into the right position.

American Bridge Division of US Steel Corporation next will bring either Span 6 or Span 165 from Vancouver. It has not yet been determined which one will come first, highway engineers said.

Span 6 is next in line south from Span 5, just off the Washington shore, which was floated into place several weeks ago. Span 165 is next south from Span 164, placed Thursday.

The decision whether to bring Span 6 next depends on how soon Pier 7, southern support of this span, is finished. Work is almost done there.

Other work on the bridge progressed steadily in routine fashion this week. Several Highway department officials from Salem were here Thursday and Friday inspecting progress of the construction.

Among them were P. M. Stephenson, assistant state highway engineer; Ivan Merchant, state bridge engineer; A. A. Rear, assistant state bridge engineer; and Roy Tokrud of the Bureau of Public Roads.

Stephenson said he will return to Astoria April 22 to address a chamber of commerce luncheon meeting and outline future Highway department plans at Fort Stevens state park. Stephenson said he believes this park has enormous potential.

March 25, 1965

Astoria Bridge Job To Reach Peak Of Activity In Summer

The coming summer should see a high peak of activity in construction of the Astoria interstate bridge.

Five major contracts totalling \$21 million will be in progress through all or most of the summer. Two of the biggest will be either completed or almost completed by next fall.

Completion of the whole bridge is still more than a year away. Most expert guesses among the bridge builders and engineers indicate August, 1966, as probable finishing time for the huge

The major contractors closest to finished are Pomeroy and Gerwick, building the Desdemona Sands viaduct. These contractors have completed all the 139 piers supporting this 2.1 mile trestle and have laid 77 per cent of the deck. Still to be finished are hand rails along the side.

Ask Extension

Pomeroy and Gerwick's completion date was originally March 31, but they have asked a time extension through the summer and presumably the Oregon Highway Department will grant it. There is no rush to finish this viaduct, because it will be months before connections can be made at either end.

This \$3.8 million contract definitely is expected to be done by late summer this year.

Contractor next farthest along is Raymond International Corporation, which has a \$5.7 million job of finishing the pier contract abandoned by DeLong

Corporation a year ago. The pier construction work is in two segments. One of them includes 16 piers to carry the bridge across main channel of the Columbia. This has the highest piers of all, Nos. 170 and 169 flanking the channel and several others nearby as high.

At the north end of the bridge, a segment of another 16 piers carries the bridge across the north channel of the river.

22 Piers Completed

So far, including work done by DeLong Corporation as well as by Raymond, 8 of 16 piers of the northern segment are finished and 14 of 16 in the southern or main channel segment for a total 22 completed out of

Work was well advanced this week on three of the eight unfinished piers at the northern end, and workmen were making steady progress.

The two unfinished piers of the southern segment include Nos. 168 and 169, two of the tallest ones in the bridge. No. 169 suffered a year of delay when original concrete seals placed on the river bottom by DeLong Corporation were found defective and had to be removed by a slow and laborious process. Now all the old concrete is gone and reconstruction of the pier has begun. Work also is progressing well on No. 168, next pier to the north.

General opinion around the

bridge is that Raymond International will finish its work in the late summer or early fall, except for a minor chore of putting tender piling around Piers 168 and 169. This has to wait until steel work is done.

American Bridge Division of US Steel Corporation, which has a \$10.1 million contract for the steel spans across the north and south channels, has had to halt work this spring until more piers are finished. It is expected to resume work within two weeks, floating prefabricated span No. 164 down from Vancouver, Wash., to be put in place. But full scale steel work won't be resumed until Piers 168 and 169 are finished some time in the summer and the unfinished steel crossing of the main ship channel can be started up again.

The steel contract will take until late in the summer of 1966 to finish, it is expected. There is no official finishing date as American Bridge Division has had delays imposed upon it that were none of its doing. Its task includes laying concrete deck on the steel spans.

Approach Work Under Way Also to be finished in the summer of 1966 is the \$12 million Astoria approach contract of Pacific Concrete company, which also includes widening of West Marine Drive from Hamburg to Bay and relocation of Kingston avenue, displaced by the connection between the bridge approach and West Marine Drive.

This contractor is well ahead of schedule as result of fine dry weather during March which enabled much fill work to be done.

J. N. Conley, Portland, is just beginning work on a \$238,000 contract to build the Washington approach to the bridge. This job is expected to be finished during the coming summer.



Workers
base of pier 1
deposit of water flowing into the collector.
ally. Concrete in pier 1's has been tested
for 100 lbs tests and the upper part will be tested after setting
for 28 days and dewatering
engineers.



With the major portion of the viaduct finished, men from Fomeroy and Cerwick Co.
are placing reinforcing steel bars in place for preparation of pouring another section of
the deck. The areas where the reinforcement is thickest is where maximum load is
anticipated.



Looking from pier 169, the completed portions of the steel work on the bridge seem to be
north and south ends of the river span will be connected.



The State Highway Department was kind enough to
provide an escort, Darryl Devnich, for this picture taking expedition. His technological
knowledge of the work in progress aided my choice of pictures and helped me gain some
idea of the amount of work involved.

January 19, 1965

Viaduct, Pier Construction Progressing



Workers for contractors Pomeroy and Gerwick are nearly three fourths finished with the concrete deck of the Desdemona Sands viaduct of the Astoria bridge. The crane shown

here is carrying a bucket of concrete from the barge beside it to the top of the viaduct, where workmen spread it. (Daily Astorian Photo)



Workers are shown here laying concrete for the deck of the Astoria bridge at a point north of Desdemona Sands. Man in the center of the picture is holding a vibrator which

compacts the concrete preparatory to smoothing the surface by the machine shown at right. Network of reinforcing steel can be seen at the left.



The concrete being set on Desdemona Sands viaduct on rails, is used to place forms

for laying the bridge deck. More than a mile and a half of deck has been laid so far.

February 4, 1965

Approach to Have Retaining Wall on Curve



Pacific Concrete company has been pouring concrete into these forms for a retaining wall along the south side of the SPAS railway track west of Kingston avenue. This is where the approach of the Astoria bridge will curve around as it

descends to an intersection with West Marine Drive at Kingston. The approach fill here will come so close to the SPAS line that this wall is necessary. (Photo by Daily Astorian)

Portland Company Low Bidder On North Approach To Bridge

The Washington Highway department in Olympia this week opened bids for construction of the north approach to the Astoria Interstate bridge.

J. N. Conley, Inc., Portland, submitted low bid of \$238,285. A combination of Port Angeles, Wash., contractors bid \$247,692, and Buckley company, Portland, bid \$255,129.

Most of the funds for building this approach are being supplied by Pacific county, Wash., which issued bonds for \$180,000 for the purpose.

Meanwhile construction continued, despite hampering weather, on all but one of the other major contracts involved in construction of the bridge.

The idle contract is that of American Bridge Division, US Steel Corporation, which is awaiting construction of more piers so it can erect more steel on them.

Span Ready

Waiting on a barge at the firm's Vancouver, Wash., staging area is the assembled span which will go between Piers 5 and 6, adjoining the Washington

shore. Pier 5 is finished, and Pier 6 is within a few weeks of completion, so installation of this span may come soon.

Other steel work on the span across the north channel of the Columbia may follow soon, for contractor Raymond International has been making steady progress on construction of piers numbered from 15 through 20.

The same firm, erecting Pier 168 north of the main Columbia ship channel, was putting up forms this week for another "lift" of that concrete tower.

This lift will rise above the river surface. The pier eventually will tower 150 feet and

Pomeroy and Gerwick, Desdemona Sands viaduct contractors, were in sight of the end

of their work as January closed. They have 70 per cent of the viaduct's 2.1 mile deck completed, and have hand rails and side walls to finish. Then this part of the bridge will be finished.

Pacific Concrete company continued work on construction of the Astoria approach this week.

The barge is needed for putting pier shells and caps into position. Meanwhile Raymond International workmen this week had virtually completed removing defective concrete from Pier 169 flanking the main ship channel, a year after work halted on this pier.

Three of the long "spuds" which support the barge were bent when they slipped into a hole in the river bottom recently, and the barge had to be taken to Portland for repairs.

Water Pumped Out Highway Department engineers said that the downstream

False Work Rises for Bridge Approach

February 17, 1965



Pacific Concrete company has begun putting up false work to support construction of the Astoria bridge approach. Piledriver is shown here putting down piling for the false work. Completed part of the bridge is in the background. Steel foundation piling for the first

two piers of the approach have already been driven. Small enclosure in right foreground of this photo shows where some of these piling have been driven. Several of the steel piling can be seen in background at right of photo.

Raymond Halts Pier Work, Damaged Barge Gets Repair

Raymond International Corporation has had to halt work temporarily on construction of piers for the Washington end of the trans-Columbia bridge, pending return from drydock of a damaged jacking barge.

Three of the long "spuds" which support the barge were bent when they slipped into a hole in the river bottom recently, and the barge had to be taken to Portland for repairs.

The barge is needed for putting pier shells and caps into position. Meanwhile Raymond International workmen this week had virtually completed removing defective concrete from Pier 169 flanking the main ship channel, a year after work halted on this pier.

The downstream cell of Pier 169's cofferdam was cleared of bad concrete several weeks ago, but work has been continuing on the upstream cell. This is now practically finished and pouring of a new concrete seal on the cofferdam floor may be done next week.

Water Pumped Out Highway Department engineers said that the downstream

cell has been pumped free of water, preparatory to putting the new seal in. Engineers said workmen on the river bottom inside this cofferdam had a scare this week when the freighter Jotunvell, a Norwegian vessel, passed very close to the cell while coming up the river.

A ship hitting that cofferdam was, while men are working inside it, could kill them, a highway engineer said.

Highway engineers reported Tuesday that 35 men all told were now at work on the bridge, with a total payroll of \$20,000 a week.

Work should continue at this level all summer, the engineer added.

150 men, P. 50. Pacific Highway Div.

They tell me this is equivalent of an industry's annual gross of \$30 million.

Highway Department so far paid out \$12.8 million, 52 per cent of bridge cost. This includes \$2 million to DeLong, \$3.4 million to J. Gerwick, \$3.0 million to Pacific Bridge Division, \$2.1 million to International.

aid Tuesday that Gerwick are now 100 per cent complete in building the 2.1 mile Desdemona viaduct, central part of the bridge.

Some contractors had a setback during the recent storms when a barge broke loose and banged against the bridge, cracking some piles and beams. No structural damage resulted. Cracks were being filled with a plastic sealing compound.

Pier 168, north of the ship channel, now projects above the surface of the river, engineers reported this week. It will eventually reach more than 150 feet into the air.

February 23, 1965

Raymond Finishes Removal Of Concrete From Pier 169

A major milestone in Astoria's old concrete was pumped out of the upstream cofferdam. Rock construction occurred over the weekend when Raymond International, Inc. completed removal of the defective concrete from Pier 169. This ended a task that began last August after Raymond took up the pier construction work abandoned by DeLong Corporation. It has involved removal of two slabs of concrete 45 by 88 feet in area and 15 feet thick one from each of two cofferdams of the pier foundation. A total of 6,000 cubic yards of concrete were broken up by powerful water jets and pumped out into the river.

Raymond completed clearing the downstream cofferdam several weeks ago and has already replaced the old seal with a new one and pumped out the water. Forms for the first "lift" of the pier were being built inside the cofferdam this week.

Rock Goes In Place Sunday night the last of the

February 24, 1965

Steel Truss for Piers 5-6 Arrives at Tongue Point



The steel truss for Piers 5 and 6 of the Astoria bridge arrived on a barge Wednesday morning at Tongue Point. It will be floated to position probably at high tide Thursday morning

to become the first steel construction on the north channel span. The truss was assembled at Vancouver, Wash., by American Bridge division of US Steel.

February 25, 1965

Trouble with Jacks Foils Span Placement Try



This photo, taken from Point Ellice, shows tugs pushing two barges carrying Span 5 of the Astoria bridge into position for attempt to place it between Piers 5 and 6. Pier 6 can be

seen just ahead of the tugs and behind the barges. Pier 5 is out of sight at right. The effort failed due to trouble with the jacks that support the span. A new attempt is planned.

Attempt To Place Steel Span Fails

American Bridge Division of US Steel failed to drop Span 5 of the Astoria bridge into position at high tide Thursday at 8:30 a.m. and will try again Friday morning, if weather conditions are right.

The 400-ton steel span, 351 feet long, was floated from Tongue Point on two barges, side by side. It is supported by four 1,000-ton jacks in pairs. These jacks were to be used to hoist the span just above the level of the pier tops, so that the barges could be moved into the right position to lower the four corner bearing plates of the span down over the piers so that the holes in the plates would fit anchor bolts on the tops of Piers 5 and 6. The barges were moored by cables to the two piers so they could be winched into exact position.

However, difficulty with the jacks was encountered as the span was being raised into position to be swung over the two piers. By the time the trouble was corrected, the peak of the tide had been lost and a strong ebb had set in, so the job was postponed and the span was towed back to Tongue Point. It had arrived there Wednesday from the Vancouver, Wash., assembly plant of American Bridge Division.

The span had been assembled at Vancouver, Wash., and barged down the river.

Span 6, extending from Pier 6 to Pier 7, next south, will have to wait until Pier 7 is completed.

Engineers said some excavation has to be done on the river bottom before the two pre-cast concrete shells of the base, now waiting at Tongue Point, can be dropped into place, filled with concrete and capped. This work will probably take a month, Ellison estimated.

February 26, 1965

Span 5 Of Bridge In Place

The second try succeeded Friday when American Bridge Division workers dropped Span 5 of the Astoria bridge into position between Piers 5 and 6, just off Point Ellice, Wash.

The operation apparently was without serious difficulty. Robert Ellison, resident bridge engineer here, said after receiving word by radio that the project was complete.

A first try Thursday morning had failed when difficulty was encountered jacking the span high enough to permit it to be dropped into place with corner bolt holes fitting the anchor bolts on the pier tops.

The 400-ton span was towed across river from Tongue Point Friday to catch the high tide at 9:30 a.m. It was jacked up high enough above the two barges which carry it, to enable it to be positioned between the two piers, winched into exact position by means of anchoring cables, tensioned to the piers, and dropped into the right spot.

The span had been assembled at Vancouver, Wash., and barged down the river.

Span 6, extending from Pier 6 to Pier 7, next south, will have to wait until Pier 7 is completed.

Engineers said some excavation has to be done on the river bottom before the two pre-cast concrete shells of the base, now waiting at Tongue Point, can be dropped into place, filled with concrete and capped. This work will probably take a month, Ellison estimated.

March 16, 1965

Contractors Resume Pouring Concrete For Viaduct Deck

Contractors Pomeroy and Gerwick have resumed pouring concrete for the deck of the Desdemona Sands viaduct of the Astoria bridge after several weeks' delay due to damage sustained when a barge hit a pier during the winter storms.

A traveling machine used to place forms for the deck concrete was damaged, but repairs have been finished.

The contractors have about a fourth of the deck left to build. Then they must complete guard rails and curbs, now about half finished, and the 2.1-mile viaduct will be complete.

American Bridge Division, steel contractor, is assembling Span 164 at Vancouver, Wash., on a falsework frame on board two barges, and will float the span down to the bridge soon, highway engineers reported this week.

The span is the first one extending southward from the

Desdemona Sands viaduct. It is a deck truss between Piers 163 and 164. It will be floated into place.

Workers of Raymond International Corporation, pier-building contractor, kept busy this week completing piers for the north channel crossing, and working on Piers 168 and 169 north of the main ship channel. Forms were being placed to pour concrete to bring Pier 168 up to 40 feet above river level. It eventually will tower 116 feet. Construction of concrete footing in the downstream cell of the Pier 169 cofferdam was in progress.

On the Astoria shore, Pacific Concrete company was erecting falsework to support the viaduct foot of the Astoria approach, and putting in grid for the fill consisting the lower end of the approach. Grading for relocation of Kingston avenue was also in progress.

March 17, 1965

False Work Constructed for Bridge Approach



False work construction for the deck construction on the Astoria approach to the new interstate bridge has been progressing rapidly during the fine spell of March weather. The two pairs of openwork twin columns are reinforcing

steel for concrete piers of the approach. Construction of the approach westward from this point will wait until May, so that there will be no risk of causing slides by excavation work in the rainy season.

March 5, 1965

Fill Construction Progressing on W. Marine Drive

The current spell of sunny, dry weather has permitted construction of a fill along the north side of West Marine Drive to proceed swiftly, highway engineers reported Friday.

The fill, varying in width up to 32 feet, will support widened West Marine Drive which will become a four-lane street from Hamburg to Bay as part of the Astoria bridge project.

Grimstad and Vandervelt, Astoria, are building the fill as sub-contractors for Pacific Concrete company, which has the job to build the Astoria approach of the bridge.

Pacific Concrete has erected two towers of steel webbing, reinforcing material for the tallest pier of the approach, just north of Alameda avenue. Steel in each of these towers weighs more than three tons, engineers estimated. Forms for the concrete will be erected around the steel.

THE OREGONIAN,
THURSDAY, MARCH 18, 1965

Astoria Span Deck Pushed

ASTORIA (Special) — Laying of concrete deck for the Desdemona Sands viaduct, central portion of the Astoria bridge, resumed this week, after three weeks' delay.

J. H. Pomeroy and Ben Gerwick, the contractors, have completed repairs to a machine used in making concrete forms. It was damaged in a windstorm last month.

Construction of the viaduct deck is three-fourths complete. The contractors are scheduled to finish the 2.1-mile viaduct next summer.

Work progressed steadily this week on construction of piers to support the steel spans that will cross navigable channels at both ends of the Astoria bridge.

Pier Work Lags

Pier construction is lagging behind other phases of the bridge project because of months of delay caused by a dispute between DeLong Corporation and Oregon Highway Commission a year ago.

This dispute, arising from a question of responsibility for faulty concrete in the foundation of one pier, led to cancellation of the corporation's contract to build the piers. Raymond International Corporation of New York now has the contract to complete the piers and has been making satisfactory progress, high-

Governors Cut Ribbon, Formally Open Bridge

Four-Day Celebration Marks Dedication Of \$25 Million Bridge At Astoria

SATURDAY, AUGUST 27, 1968

By PETER N. TUGMAN
Staff Writer The Oregonian

ASTORIA (Special) — The \$25 million Astoria-Megler Bridge was dedicated here Saturday under faultless skies, closing the last link in the Highway 101 from Tijuana, Mexico, to the northern tip of Washington — 1,625 miles.

Oregon's Gov. Mark O. Hatfield and Washington's Gov. Dan Evans presided and made a gee-whiz story in an estimated 20,000 to 35,000 themselves.

mon barbecue at the fairgrounds and finally a semi-pro football game at Gyro Field.

The tone of the ceremonies was set by variations on the theme: "They said it couldn't be done — but we did it."

That, and a recital of the immense potential of the big bridge and recaps of her vital bridge and recaps of her vital statistics. And these statistics make a gee-whiz story in an estimated 20,000 to 35,000 themselves.

Gov. Evans was true to his promise to "keep this a short speech because the tolls are off just now and we want this bridge to start paying for itself."

Then Hatfield told the crowd the big bridge is not the only activity or only accomplishment stirring the north coastal area. He ticked off the conversion of Tongue Point to peacetime use; the improvement of harbor and docking facilities; increased activity in tourism, recreational and

congratulate the taxpayers of Oregon and Washington on this achievement and on the bright promise which it offers."



The backdrop for the stage setting Saturday at official dedication ceremonies followed the big parade along West Marine Drive. Corner of speaking stand is visible at left. Astoria Clowns are arriving at

He said the span was a "bridge to bring people together" and prophesied it will "open up great new areas of the Pacific Northwest."

He cited the recent removal of tolls on the Longview Bridge, estimated tolls will soon be off the Interstate Bridge at Vancouver, Wash., and noted "our tourist boom has just begun."

Elmer C. Huntley, chairman of the Washington State Highway Commission, said "Washington's big parade preceding the dedication featured 110 entries in four divisions. Neil

benefits reaped to date on Tacoma Narrows Bridge paid was regatta admirals. Darkly for itself in 13 years. I believe beautiful Marge Hubbs, on Highway 101 up and down this bridge will surpass its of the regatta, rode with court, and the same collection of clowns, cavemen, and pranksters who have grown to be fixtures in Oregon civic events, rode, marched and cavorted.

During the day, the ferry M. R. Chessman, named after the Astoria editor, made its last runs carrying foot traffic for the big parade preceding the dedication featured 110 entries in four divisions. Neil

bridges is well-placed. The manager of The Oregonian, city

Thousands Here For Celebration

Govs. Mark Hatfield and Dan Evans cut a ribbon that tied together two halves of a swinging gate Saturday at about 2:40 p.m. under a beaming sky and with the assistance of Miss Oregon and Miss Washington.

Then the two governors pushed the gates open and repeated the task two or three times for benefit of a horde of press photographers, and the \$24 million, 4.1 mile Astoria bridge was formally open.

It was the climax event of one of the biggest celebrations in Astoria history. The combined Regatta and dedication ceremony, which attracted thousands of visitors including some of the top dignitaries of the two states.

The crowd had waited nearly two hours under a bright sun for the brief dedication ceremony, continually augmented by units of a huge parade that marched the four miles from downtown Astoria, and by the thousands who watched the parade and followed it to the dedication site.

15,000 Visitors Here

There were easily more than 15,000 visitors in Astoria for the day's events.

There might have been more but for a drizzle Friday night that threatened to make the celebration drenched debacle. But the clouds cleared away as dawn broke, and the sun shone all day long.

Temporary stands lined both sides of West Marine Drive at the bridge entrance. Hundreds filled these stands; thousands more lined the streets and climbed the West Astoria hills to see the spectacle.

There was less traffic problem than had been feared. State and city police, supplemented by the sheriff's force and its auxiliary, handled the vehicles smoothly and deloured through traffic around the area. Traffic across the bridge was halted three hours. It surged across the bridge in multitudes both ways when the gates were opened and the crowds cleared away.

Gov. Hatfield, one of four principal speakers at the dedication, said an upsurge of traffic all along Highway 101 is noticeable since the bridge went into use July 23.

He discussed economic growth that has hit the Sunset Empire recently, bringing lower taxes in Clatsop county for the first time in years.

"I ask the scoffers, is this an area that can be called nowhere?" he cried.

Hatfield presented to Columbia River Maritime museum the US flag that American Bridge Division flew from the steel beam that made the first complete tie across the river. He and Gov. Evans had signed it.

He also presented to Mrs. M. R. Chessman a framed eulogy of her late husband, former chairman of the Oregon Highway commission and publisher of the Astorian-Budget, that had hung on the wall of the ferry M. R. Chessman for 13 years.

Gov. Evans invited people of both sides of the river to visit each other often, calling such visits "a built-in toll-paying project."

Urges Brief Ceremony

Calling himself a brief speaker, he urged that the ceremony be speeded up so traffic could begin flowing again and thereby speed up the process of paying off the bridge debt.

Glenn Jackson, Oregon Highway commission chairman, who presided as master of ceremonies after Larry Tyle of the Regatta association had opened the proceedings, noted that the bridge is final link in a 1,625-mile highway from Tijuana, Mexico, to Olympia, Wash. "We

have spent \$108 million since 1930 improving our share of this highway and another \$1 million in building access roads to it," Jackson said.

He predicted a big boom ahead in tourist business, citing the fact that only a small number of tourists, more leisure time will put many millions more on the roads, he said.

Jackson said the Highway commission has retained consultants to study the problem of tolls and possibly recommend changes if this seems desirable. Traffic so far has exceeded expectations substantially.

Elmer Huntley, Washington Highway commission chairman, said that the bridges usually do better than expected in traffic volume.

Congressmen on Hand

"I am confident this one will be paid for long before it is anticipated," he said.

Huntley called attention to the large burden of cost that Pacific county has assumed to provide a substantial share of Washington's contribution to the project.

Before the ceremony the Astoria Clowns presented honorary membership plaques to Govs. Evans and Hatfield, Regatta Admiral Danaher, Newhouse of Portland, and other officials.

Two congressmen, Wendell Wyatt of Astoria and Mrs. Julia Hansen of Cathlamet, where among the guests.

Tom McCall, secretary of state, Rear Admiral Richard Schudtman, 12th Coast Guard district commandant, state highway engineers Forrest Cooper of Oregon and Charles Prahl of Washington, former highway engineer William Bugge of Washington, now retired, and many members of both state legislatures.

Sen. Dan Thiel and Rep. William Holmstrom of Oregon effort to obtain a bond issue for the bridge, were on hand to see the success of their work. Also present were two former Astoria chamber of commerce managers Charles DePoe of San Francisco and Norris Johnson of Corvallis, both of whom played big parts in the effort to make the bridge a reality.

Two Governors Officiate At Astoria Bridge Dedication



ARCHING GRACEFULLY across the Columbia River is the Astoria-Megler Bridge, dedicated Saturday. It's the last major link closed in Highway 101, which runs 1,625 miles from Tijuana, Mexico, to tip of Washington. In set on Washington side (left) is Gov. Dan Evans, and on Oregon side, Gov. Mark Hatfield. Both paid tribute to foresight and fortitude of bridge planners. See story page 24. (Staff Photo by Corvallis)



ASTORIA-MEGLER BRIDGE was opened officially Saturday with snipping of ceremonial ribbon on pair of swinging doors on the span. Doing the honors are Gov. Daniel J. Evans, Washington (left), Sandra Lee Marth, Miss Washington, Gov. Mark O. Hatfield, Oregon, and Estrellita Schiel, Miss Oregon.

New Bridge, Hwy 101 Section Opens Saturday

Aug. 29, 1964



Photo taken in West Astoria looking toward Youngs Bay. The new Youngs Bay bridge with Warrenton in background. Cor-

monwealth of Oregon. The bridge is scheduled to be opened at 2 p.m. as part of Regatta festivities. Ribbon will be cut by Warne

Near administrative assistant to Gov. Mark Hatfield with numerous other dignitaries on hand. The bridge and new

section of Highway 101 cut nearly four miles off distance between Astoria and Warrenton. (Astorian Photo)

'Midnight' Arrives, Departs —But She's Still Cinderella



SYMBOL of the "new" Astoria, the newly-opened Columbia River estuary bridge soars 200 feet over the ship channel from the hillside in this foreshortened telephoto shot, to link both sides of the river econo-

mically and socially for the first time in history. Opened for traffic before the work was completed, the bridge already handles more than twice the capacity of the old ferries. (Staff photo by Bacon).

Communities At Mouth Of Columbia River Caught Up In Seemingly Endless Tide Of Optimism, Prosperity

By DON HOLM

Staff Writer, The Oregonian

You won't believe it. Nobody does. But Astoria, Oregon, U.S.A. is on fire.

Down where the fabled Great River of the West rolls into the Pacific, an economic and cultural renaissance so new and dynamic that not even the bearded homeguards fully appreciate its potential, has emerged in the summer of 1966 to confound the handicappers.

For the first time since Lewis and Clark wrote painfully of the "Dismal Niche" they camped in after a 4,000-mile journey overland from the "U. States," the jinx-plagued and disaster-ridden, hard-luck communities around the mouth of the Columbia are caught in a tide of optimism and prosperity that looks like it won't quit.

Astoria, the original hard-luck town, which has bounced up and down like a municipal yo-yo since John Jacob Astor established the first American town west of the Rockies there in 1811, is turning into the cosmopolitan Cinderella City of the West Coast — looking, acting and talking like a miniature San Francisco.

City Has Troubles

Trodden down by cycles of floods, fires, landslides, depressions, and disasters man-made and natural for a century or more, only a half dozen years ago its citizens were deserting the town so fast that Commercial Street looked like High Noon. Not too long ago Sen. Wayne Morse labeled Astoria a "pocket of poverty."

Through six wars since the first Astorians erected a palisade around their trade goods on a site only a couple of blocks from the present ferry landing, the town has been battered by a boom and bust economy with a semi-transient population that has put little into the community and wanted out of it only the fastest transportation.

It has suffered from economic and cultural strangulation of one form or another for so long that around the name "Astoria" has grown an unshakable public image of a good place to be from.

Today you wouldn't know the place. Midnight has come and gone and she's still Cinderella.

There isn't an apartment to rent or a home to be had in the area. Industrial and business property has become so scarce that it's now economical to create it out of waste tidelands. Tourism is increasing about 20 per cent a year. In spite of new motels and trailer parks sprouting like mushrooms in a rain forest, it's impossible to find a vacancy after 5 p.m., summer or winter.

In a community where there has never been any unemployment because, as chamber of commerce manager Jean Hallaux



THEODORE BUGAS

President, Chamber of Commerce

observed, job-seekers took one look and left, the migration is inbound.

In a seaport traditionally bypassed by ships bound 86 miles inland to the Portland-Vancouver area because it was more economical, a new harbor is a-building, the longshoremen's union is setting new records for fast turn-around time, and the estuary is crowded with foreign flags.

Other lines of endeavor which once collected the moss and fungus of disuse such as dairying, mink farming, and even lumbering and logging, are taking root again like a budding new hemlock out of the compost of a decaying stump.

There is a new boom in deep sea sport fishing, and commercial fishermen — in spite of the mammoth Russian fleet just offshore — never had it so good, not so much because of any increase in fecundity of the sea as because of new scientific methods of utilizing the resources on the continental shelf.

And out of the mildew and gingerbread and pathetic antiquarianism there is also emerging a new and unexpected resource, Astoria's long and colorful past.

As one Californian tourist, reading the frieze which winds itself around the outside of the Astor Column, was heard to remark, "Man, this place is lousy with history!"

Additional details on page 31.

Astoria Snapping Out Of Lengthy Doldrums



ASTORIA'S long and checkered history (as the oldest American settlement west of the Rockies) is summed up by the 125-foot Column atop Coxcomb Hill. Pat Thompson, a freshman at Clatsop Community College, who posed for the photo, found herself as much impressed as the increasing number of tourists to the area.

By DON HOLM

Staff Writer, The Oregonian

See Story on Page 1, also

Astoria, an off-and-on sadsack town for a century or more, with what seemed like a built-in jinx, has been reborn in recent years and is taking on the appearance of a permanent boom.

What is behind this renaissance?

Many factors, a lot of which can't be measured by any existing devices, in the words of this year's president of the Astoria Chamber of Commerce, Theodore T. Bugas.

But for one thing there's the new \$100 million Crown Zellerbach complex just upriver at Wauna, which some insiders have predicted eventually will become the largest industrial community of its kind in the world.

There's the new Young's Bay Bridge (not to be confused with the just completed Astoria Bridge) which has drawn the Clatsop communities of Astoria, Warrenton, Hammond, Gearhart and Seaside together in a way never experienced before.

There is the Job Corps center, rising out of the cobwebs of Tongue Point, which has brought in the families of some 400 to 500 permanent staff members and an enrollment of about 1,000 trainees,

plus an expenditure of \$17 million in about a year-and-a-half.

There is a rejuvenated Port of Astoria, once crumbling in ruins, which has been brought back to life to become already the largest shipper of logs in the world, and which is now getting into the lucrative grain business.

Some other things:

Reconstruction of U.S. 30, once a half-day nightmare, now an easy hour-and-a-half from Portland; the new oceanography lab going up this summer which signals the pioneering of a frontier as exciting as space; the booming commercial fishing industry, and the superb sport fishing for salmon which attracts anglers from all over the world.

Last year about 500,000 salmon were taken on sport ear, which amounts to at least \$5 million in meat alone, to say nothing of money spent in pursuit of the sport.

There is the booming recreation industry, epitomized by the magnificent Fort Stevens State Park, which is almost a national park in size, versatility, and attraction.

There are the new wood processing and remanufacturing plants springing up to utilize the raw materials being harvested in nearby forests and the sea.

Then there is that intangible—but profitable—resource as yet unexploited by Astoria: the cultural potential reflected in the outstanding new Marine Museum, the Clatsop County Historical Center in the old Flavel mansion, the Fort Clatsop National Memorial, new community college, Coxcomb Hill, and the new spirit of preservation of local tradition.

Finally, of course, there is "The Bridge."

On Saturday, Aug. 27, Gov. Mark O. Hatfield and Gov. Dan Evans will formally dedicate this \$25 million, 4.1-mile-long structure which rises out of the Astoria hillside, soars 200 feet into the salt air over the Columbia estuary, crosses Desdemona Sands on a causeway to Point Ellice on the north shore. The bridge will eliminate the last bottleneck in a major north-south route between Mexico and the Strait of Juan de Fuca.

All of these factors have created such a groundswell of diversified potential that even the unexpected loss of one or more of these assets would not likely halt the booming tempo of the times.

It's not all fish and chips (or salmon and lumber), of course. And there are some problems.

Housing Needed

There is an immediate and urgent need for housing. Astoria needs from 600 to 800 new homes right now, and not one builder has come forward to profit from this opportunity—mainly because of today's critical mortgage market.

From the Astor Column to the rotting pilings around the old abandoned Pillsbury flour mill, there is an urgent need for public services and works to handle the burgeoning population and business upsurge.

As for The Bridge, (on which the highway commission jumped the gun and opened for traffic July 28 before construction was completed) there are those who see it not as an asset but as just another economic and cultural disaster.

Detractors point out that the new link—itsself a controversial jinx almost from the day the first survey markers went up—will be an instrument to bypass trade to the north side, to encourage further exodus.

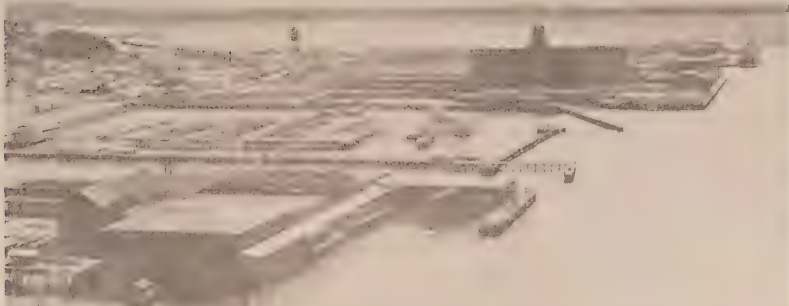
Toll Criticized

They say that somebody goofed when only a two-lane, 28-foot roadway was provided which will be obsolete in five years; that Oregon got stuck for all of the \$25 million construction costs, while the north shore and Southwest Washington will be the principal beneficiaries; and that its \$1.50 general toll charge is enough to send people around by the free Longview Bridge, usually with an improved U.S. 30.

What do the business, professional, and civic leaders and just plain citizens think about all these ingredients now bubbling in the pot down there around the Dismal Niche, sometimes known as Hungry Harbor, on the eve of the greatest single event since the Tonquin arrived with John Jacob Astor's company of adventurers?

Next; New blood and old lovers.

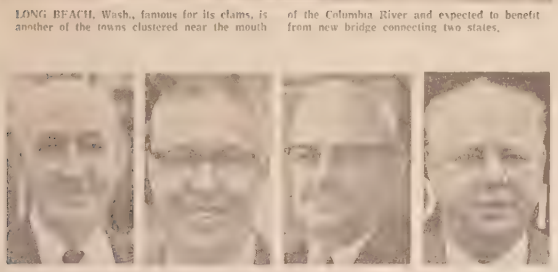
Coast Towns Expect New Bridge To Open Way For Tourism



PORT OF ASTORIA, packed with fishing boats, is biggest business for community now seeing impact of new Astoria Bridge.



ACROSS the Columbia River from Astoria is the Port of Ilwaco, Wash., where residents hope to feel some of the same economic growth predicted for Astoria.



LONG BEACH, Wash., famous for its clams, is another of the towns clustered near the mouth of the Columbia River and expected to benefit from new bridge connecting two states.

FOUR MAYORS of coast areas most likely to be affected by opening of new Astoria Bridge are (from left) Harry M. Steinbock, Astoria; Ted Lentr, Long Beach, Wash.; Elvin C. Goodman, Seaside, and Terry Lehman, Ilwaco, Wash.

CROWDED HARBOR at Ilwaco, Wash., accommodates numerous small boats used by weekenders and residents for ocean trips. Tourism is expected to become bigger business with Astoria Bridge. (Staff Photos by Leonard Bacon)

By DON HOLM
Staff Writer, The Oregonian

On a dismal November day in 1805, a cold and wet and hungry band which called itself the Corps of Discovery, found itself stranded on the storm-swept north shore of the Columbia estuary after a 4,000-mile overland trek from the United States.

The leaders of the band called the shallow cove, which afforded little protection either from the wet southwest gales by sea or from the surly and thievish Chinooks by land, that "Dismal Niche."

Then one day across the five-mile estuary came a delegation of friendly Clatsops to invite the miserable strangers to settle in the banana belt on the south side where the elk and deer were plentiful and the rivers swarmed with salmon and smelt, and there was salt to be had from the seashore.

This delegation of Clatsops was Oregon's first chamber of commerce, and for the next 150 years the north shore remained a virtual primitive wilderness while on the south side grew up such communities as Astoria, Warrenton, Hammond, and Seaside, to siphon away trade and prosperity.

So the story goes, anyway.

Ironically the Dismal Niche (which Fort Clatsop historian, Burnby M. Bell, believes is the only unmarked Lewis and Clark remnant left in the area) is only a few yards away from the Washington end of the Astoria-Megler ferry which has been operated since 1947 by the Oregon Highway Department.

Bottleneck Eliminated

On July 28 this irritating, picturesque bottleneck was eliminated when the Highway Department jumped the gun on the scheduled Aug. 27 dedication of the Astoria Bridge and opened the span to traffic.

The \$25 million 4.1-mile link in U.S. 101 from Astoria to Point Ellice, was expected to release a flood of tourism and commerce to the long-starved southwest Washington areas. The first day the bridge was opened almost 3,000 vehicles crossed it — double the usual ferry traffic.

Some people on the north shore consider this retribution for that dirty trick played on them 150 years ago by the Clatsop delegation.

Many people all over Pacific County, in Long Beach, Ilwaco, Seaside, Chinook, Oysterville, Nabots, and other towns, and points north and east, anticipated the bridge to siphon off business from the Oregon coast. And the fact that Oregon picked up the two ends of the cost added spice to the relish.

(Oregon, however, will collect the tolls until the bridge is paid for, and Gov. Mark O. Hatfield said he hoped some way could be found to use the Astoria Bridge tolls to pay off all Columbia River bridges, making them all toll free).

Others such as Mayor Ted Lentr of Long Beach and Mayor Terry Lehman of Ilwaco, as well as many merchants, are more thoughtful in their views.

The bridge, they point out, is open for traffic both ways.

There is little doubt about the importance of the new structure (one of the longest in the U.S.) which now dominates the skyline near the mouth of the Columbia. Its impact on the economy and ecology of the entire coastline of Oregon and Washington will be felt for many years.

Culminating efforts to bridge the estuary which began almost a half-century ago, the new bridge is the last link in the north-south highway system between Mexico and the Strait of Juan de Fuca.

It will for the first time eliminate what veteran Clatsop County Commissioner Verne Stratton, calls the "big hole" in the coast highway between Otis Junction and Astoria — which has been without regular mainline bus and freight service because of the dead-end at the river.

It will open up the Oregon beaches to Seattle-Tacoma, and the Washington beaches to Portland and the Willamette Valley.

It will also help create the beginnings of a Portland-Vancouver metro complex at the mouth of the Columbia, 58 miles closer to the high seas.

Mayor Lentr on the peninsula, agrees with everyone that tourist business is skyrocketing and the bridge will give it another boost (he's owner and operator of the Pacific View Motel).

Weekends Busy

"It will make our area much more accessible and give us through motor freight and bus service which we need badly. People didn't like that ferry wait — especially the commercial people."

The town has 800 permanent residents, but as many as 10,000 on busy weekends. Now even the winter trade is booming — tourists in the winter were almost unheard of, said Lentr, who's lived there 50 years.

A retired groceryman, he now has a ceramic tile business in addition to his motel and has served as mayor for 18 years. Most of the present citizens are retired Portland and Seattle people who have maintained dual residences for years. But this is now changing and the newcomers are demanding services, recently voting a bond issue for a new sewer and water system.

Mayor Terry Lehman of Ilwaco — a sleepy old fishing village which has in recent years burgeoned as one of the nation's busiest deep sea fishing harbors because of its proximity to the "bar" — is 53, a meat cutter, and a locker operator who has lived there 21 years.

"The bridge is definitely going to boom this area — the entire north side," he said.

Like Mayor Lentr, he remarked that some business people feared retail trade would go to Astoria, but that they would make it up with tourist business.

Housing Increased

Ilwaco has a new housing project, including two new motels, and a lively real estate market for property seekers. New trailer parks, as well as nearby Fort Columbia, Fort Canby and the North Jetty areas add to the local attractions.

Like any other small town suddenly overrun with prosperity, the main problems are police control, better water and sewer systems — especially to handle the weekend crowds.

But like any local entrepreneur, he can stand on a busy corner and watch the cars turning off the highway toward the busy boat harbor and tick off the license plates with that warm satisfied feeling. New York, Ohio, Texas, Mississippi, Michigan, Connecticut, Oregon.

On the other hand, Dr. T. Rex Baldwin, mayor of Gearhart, Ore., a community not too far from the old Lewis and Clark saltworks, a dentist in private life and a resident for 20 years (although he's owned property there for 45 years) has other ideas.

He takes a dim view of the new bridge — as a matter of fact, of the subject in general. "Gearhart is a residential city," he said. "We have discouraged all commercialism. We have no tourist facilities. Those who live here have come down from Portland, and they either live here all year around or maintain homes and commute."

Economy Disregarded

As for the impact of the new bridge on the economy of the coast communities, he said he didn't know anything about it, and indicated he didn't care to find out.

"Go see Goodman at Seaside and Steinbock at Astoria," he said.

His neighbor, Mayor Elvin G. Goodman of Seaside, thought the bridge would have a terrific impact on his economy.

"We're going to get a big share of the new business because we are in a good position to receive it. The increasing traffic on the ferries and the number of people

on wheels today, shows that tourist business is picking up and sooner or later they are coming our way."

He predicted it would also help Seaside's winter business, open up new bus service and motor freight, create the need for new motels and restaurants.

"Fort Stevens has proved that the business is there, and they can't handle all of it."

Worker Converted

Clatsop County, he concluded, has a glorious future and the increased pressure which the opening of the new bridge will bring, will force the upgrading of the rest of U.S. 101.

Goodman, prophetically, is an excellent service worker who was retired when the Tongue Point base closed. He became an antique and antique store owner and now mayor.

This Coney Island of the Northwest, in spite of the Labor Day riots, has had the best business year on record. Today (with a permanent population of around 4,000), it's a bigger, badder, brasser than ever. Whatever Seaside's destiny is, it surely will never lose its honkytonk character.

Mayor Harry M. Steinbock of Astoria well remembers the most recent doldrums in his town, but now the wounds have healed and he can smile about it.

"I speculate since the town is booming like it won't quit."

"Tourist business has been tremendous (The help in his busy drug store only a couple blocks from the ferry landing, greets all strangers with a smile and invitation to stay awhile).

"The Job Corps has been a big thing for us, and the permanent staff started the influx. Then there are the construction workers on the bridge and other projects. Crown Zellerbach gave us a big boost. Now we have Northwest Natural Gas which has brought in new families and is helping us industrialize."

Activity Cited

He called attention to the new specialty restaurants, new motels and service industries, the harbor full of ships, the new library being built with an initial gift of \$100,000 from the Astor family, and other busy attractions like Fort Clatsop, Fort Astoria, and the Maritime Museum.

Steinbock said a delegation from Astoria's "sister city" of Waldorf, Germany, would be on hand for the Aug. 27 and 28.

"I would say that business will increase 16 or 20 per cent above what it is. Many people here like to go to the ocean beaches on the peninsula, but it took six hours by ferry and back. I also feel that people on the north shore will do a lot of shopping in Astoria."

NEXT: The "Wet Sputnik."

Astoria-Special Report: Boom Spurs Need For New Housing

Second in a series of articles on the "new Astoria" and the impact of the bridge on the economy of the lower Columbia.

By DON HOLM
Staff Writer, The Oregonian

"Tell the readers," said Deskin O. Bergey, manager of Pacific Power & Light Co. in Astoria, "that someone must build 600 homes here this fall for the new families that are on the way — and another 200 by the first of the year."

I had gone into the Sea Fares on the waterfront for dinner. Cars from states you never hear much about jammed the parking lot — Rhode Island, Delaware, West Virginia.

There was a waiting line, but because I was alone the hostess seated me with another stranger who had offered to share his table.

He turned out to be Bergey, one of the people I had planned to interview.

Among other things, he said, new housing was needed for families of Crown Zellerbach workers who will be employed at the \$100 million complex at Wauna, which some day would be the biggest of its kind in the world.

"This is Big with a capital B," he exclaimed. "The town is red hot. The Youngs Bay Bridge, U. S. 30 improvements, Tongue Point. If you haven't been here for five or six years you won't recognize the place."

Bergey said when he first arrived in Astoria in 1961, citizens were evacuating the place. There was a general air of gloom and pessimism, and common street conversation usually started with news of the latest business firms to fold.

"Something happened. I guess we hit bottom and had no place else to go — then things began to click."

Where else, he said, can you find a city of 12,000 with at least three major highways (101, 26, and 30) along with State 202, a major river and world seaport; a diversified industrial base (lumber harvesting and manufacturing, commercial and sport fishing, export trade, tourism, recreation, agriculture, food processing); and a cultural potential unequalled?

"When I came here, they didn't even have the famous Astoria Column lighted at night," he said. Now it blazes proudly atop Coxcomb Hill like an Atlas-Agena missile about to blast off.

"Here you have a flavor not found in any other city. The different ethnic groups, the cosmopolitan atmosphere that comes of being a world port, plus our parks, and cultural activities. We don't have to depend on tourism like Seattle."

The other day, he said, he was invited to the Seaford Laboratory run by Dr. Edward Harvey, to sample some



DOWNTOWN AREA of Astoria is busy again after rapid recovery from population slump in early 1960s.

smudge made from skad and bottom fish. "You couldn't tell it from pork sausage." On another tack he said, "The community deserves a lot of credit to face up to a problem that belongs to all of us. The Job Corps here. There are 1,000 kids out there who need help, and 400 or so adult administrators who are dedicated to their jobs, and the community has pitched in to help them."

Astoria, he indicated, was also an antiquarian's paradise. The old town abounds in gingerbread, period houses, historical landmarks. Many of the authentic old homes have been marked with plaques giving the history of the house and its inhabitants.

"When I moved here," he said like a man with a new love, "the town was dead. Now look at it!"

As he finished his desert and picked up his check to rush off to another meeting, he mentioned that he was the outgoing president of the chamber of commerce — an assertion he had given me no cause to doubt.

Over at the Seaford Lab, Dr. Edward Harvey was less convinced about the new Astoria Bridge. The greatest impact, he predicted, would be felt on the north shore.

"Ilwaco is booming. So is Long Beach and the Peninsula. Astoria will find itself in the main stream, but not part of it. The town will grow. Warrenton will grow. But most of the impact on this side will come from improving U. S. 30 and from the Wauna complex."

He was concerned about the two-lane bridge becoming a bottleneck, especially in event of a breakdown on the span. Even without the bridge, he noted, one could drive to Seattle in three and a half hours by way of Longview.

History Abounding

"One of our best unexploited assets," he said, "is our historical resource. We have history and culture here — and we've got to sell it."

He didn't have a word to say about the potential scientific wonders of the sea — almost none of which has yet been exploited. But, after all, to a scientist in the business this is old hat, Sunday supplement stuff.

Earlier the owner of a third rate motel, off the main highway, was full up by noon. Even by calling around he couldn't find a room.

"It's been this way ever since I arrived here a year ago. Even in winter we're full up by five o'clock."

To what did he attribute the boom?

The bridge, of course, but also the Job Corps, the Wauna installations, and "just general business stimulation."

Finally, I found a place to stay in a new motel which had sprouted up under the spiral approach to the new bridge, that takes off from Marine Drive and does a 360-degree climb to a dizzy 280 feet above the bay. The motel was so new that it wasn't even open for business. Painters and decorators were still swarming through the units. But by 3 p.m. it, too, was full. A telephone installer had to be called to hook up the phone in order to call chamber of commerce manager Jean Hallaux for an appointment.

The same question was put to him.

"It all goes back to the closing of the Tongue Point base and the pocket of poverty label hung on us by Sen. (Wayne L.) Morse. During that period the population declined rapidly."

In 1960, he said, the Clatsop County population was 27,280; in 1964, 23,300; in 1965, it boomed up to 27,700.

In 1950 the population of Astoria was 12,331; in 1961, after the Tongue Point base closed, it dropped to 11,249.

Other factors, he said, were increased automation in the lumber industry, loss of the Pillsbury flour mill, the Port of Astoria going to "pot," and exports falling off.

"In 1964 people couldn't believe it when the state released June population figures. So we made an actual count and came up with 8,672 in midsummer!"

But by 1965 the count had jumped to 10,500 according to the state Bureau of Census; but a count of water meter and other utility hookups showed more than 11,000. It's now well over 12,800.

"Almost unknown outside of this area," he said, "is our new Youngs Bay Bridge which has had a tremendous impact on the south shore communities by eliminating that bottleneck."

It is, by the way, the longest bridge in Oregon.

Wauna, he said, was another big factor and construction of the Columbia River (now officially the "Astoria") bridge.

The Job Corps brought in a host of people. "It has made



a tremendous impact—with something like \$17 million poured into our economy."

Astoria, Hallaux said, has a long history of wartime boom and peacetime bust (all the way back to the War of 1812, you might say). Fires and slides from time to time have taken tolls. In recent years the loss of the Tongue Point base, Pillsbury mill, slumps in agriculture, lumbering, salmon and tuna packing, affected the economy and morale of the town.

(At 2:08 a.m. Dec. 8, 1922 fire broke out in Astoria, which was mainly built on pilings over the water. Before the wind changed, some 32 blocks were destroyed at a cost of more than \$11 million. Worse yet, the city's business and waterfront streets dropped into the debris-covered estuary when the pilings gave way, leaving no way to get in or out of the devastated area where the ground level was nine feet below the surrounding roadways. Reconstruction was a heartbreaking task, and many people believe the city never ever really recovered from this disaster.)

"At one time Commercial Street was like a ghost town. There were empty stores lining both sides of the street. Now look at it!"

Searching for reasons, he noted that agriculture was affected only because of the lack of large tracts in the coastal areas for today's large scale type operations. Mink and dairy farming, however, are still going strong.

(Visitors listening to news and weather on the local radio stations hear forecasts end up with "the weather in the cranberry bogs." This isn't a local joke. In the Astoria area, even the cranberry merchants are busier than people these days.)

"Another factor that most of us don't think much about is tourism. This has been increasing 20 per cent a year ever since the Seattle world's fair."

"Tuna came back again after disappearing for several years. Meanwhile, Bumblebee has been buying tuna from Japan and keeping its plant going year around. Last year, in fact, they ran short of cannery workers in the off season — something that's never happened before."

"Salmon and bottom fishing have been good. We've made strides in utilizing other fisheries such as whaling and the experimental activities at Bio-Chemical in Hammond."

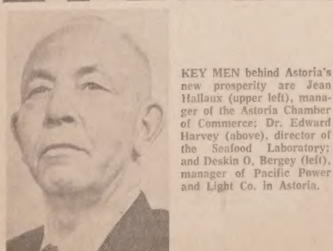
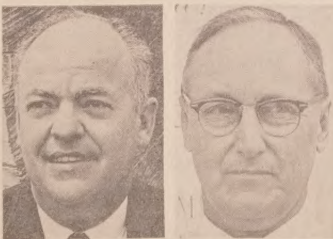
"The Port of Astoria came to life a couple years ago. We are again using the old Pillsbury elevator for a growing grain business. Also the longshoremen decided they didn't want to leave this area and they've helped put us back in the shipping business by their efficiency in turnaround time."

Astoria got out of the sport fishing business when the controversial salmon derbies were dropped. Most of this business has gone to Warrenton and Ilwaco. The latter harbor—where at least 75 charter boats are based—has the best facilities at present and lands more salmon than fabled Westport, Wash.

"We'd like to develop more industrial areas, but here we have to create land—can't just buy a farmer's wheat field and go into the industrial park business."

This, he concluded is where the new bridge will have its greatest impact.

Next: The First Chamber of Commerce and interesting people.



KEY MEN behind Astoria's new prosperity are Jean Hallaux (upper left), manager of the Astoria Chamber of Commerce; Dr. Edward Harvey (above), director of the Seaford Laboratory; and Deskin O. Bergey (left), manager of Pacific Power and Light Co. in Astoria.

JAPANESE FREIGHTERS load logs at Astoria, now the leading log shipment port in the

U.S. The city's rejuvenated harbor is usually crowded with ships from many nations.



REPLICA of Fort Astoria is part of what one resident calls "one of our best unexploited assets, our historical resource."

WELDER repairs a ship in Warrenton Boat Yard, one of the area's busiest industries.



ROADSIDE stop at Long Beach, Wash., reflects type of seasonal tourist business that was vital to the area's economy before the new Astoria Bridge was completed.



PAST GLORY of Astoria's long and colorful history is recalled by this cannon on the court-

house common. Local tradition is being well preserved in memorials, historical center.

Astoria Cheers Bridge, Envisions Prosperity

FRAGILE steelwork of main span of new Astoria bridge towers above jumble of piers and old docks in the harbor. Though bridge is notably unesthetic, residents are enthusiastic because of its promised impact on Port of Astoria and lower Columbia River region.

BRIDGE BOOSTERS who feel the newly opened span will bolster the Astoria region's economy include (from left) Harold C. Gramson, mayor of Warrenton; "new crowd" member Ted Hodges, manager of Port of Astoria; and old-timer Charlie Cass, 75, who unretired to work at sport fishing center.



Residents Ponder Economic Impact Of Increase In Shipping, Tourism

Last in a series of articles on the renaissance of Astoria and the impact of the new bridge on the economy of the lower Columbia.

By DON HOLM
Staff Writer, The Oregonian

Once upon a time, not long ago, the Port of Astoria consisted mostly of a lot of paper plans and a harbor of rotting pilings. Even after some \$3 million in general obligation bonds were approved, little was done even to spend the money.

Today Astoria is the largest log loading port in the world, and is getting into the grain shipping business, with 64,000 tons so far this year. During the first six months of this year, 141 million tons of logs were exported, mostly to Japan.

About \$2.2 million of the bond issue has been applied to rehabilitating the harbor facilities and terminals, and now there is a good chance of federal matching funds of which about \$300,000 will be spent reclaiming tidelands for industrial expansion.

One of the "new crowd" of Astorians who has had a part in this is Ted Hodges, the port manager, who at 60 had spent 40 years in the "steambot business" when he was lured away from the Albina dock in Portland.

'So I Joined 'Em'

"I spent 20 of the 40 years fighting with port authorities," he said, "so I decided to join up with 'em to see what they had to offer."

For years he'd told friends it would be a — cold day before he would work for any port authority.

"When I came down here March 1 to start my new job, it was snowing and blowing — worst storm they'd had all year."

Watching the Port of Astoria come alive has made it worthwhile. But what are his goals?

"My board asked me the same question yesterday. The answer is, we're going after every available cargo to keep Astoria healthy, and a healthy Astoria means a healthy Portland, and a healthy upriver country."

The port, he said, also will get the north shore business with the opening of the new bridge. They have no rail or barge facilities over there, and no outlet for exports.

"We've got the facilities already, supported by the taxpayers of Clatsop County. This should draw both sides of the Columbia together economically."

It was a cold day when he took over his new job — but things were, indeed, getting hotter by the minute.

How does the Clatsop County government view the boom, and what is it doing to prepare for needed services?

Veteran county Commissioner Verne Stratton (five terms) said: "We're coming alive again. It's gratifying to come down to the office these days and not be able to find a place to park, although it's breaking my heart as a realtor (in private life) not to have something to sell to folks coming in."

Acre's Housing Scarcie

(The classified section of the Astorian-Budget that day listed only one house for sale in the entire city.)

"I don't know how we are going to handle the influx of citizens for Wauna. They're coming whether we're ready or not. Maybe we can get LBJ to figure it out — he's the one who loused up the mortgage market. I don't know of any builders now who are interested — and lenders are about as tight as they can get and still stay in business."

"It's going to be a real problem for the new citizens," he added. They can live in tents during the good weather, "but it gets kinda wet here in winter."

The new Astoria Bridge, he said, will put more people on U.S. 101. He opined that this is a better all-weather route than the one over the Siskiyou — once a couple of bad spots are cleared up.

As for U.S. 30, the downriver route, "I remember when it took three hours from Portland. Now with the new improvements a lot of weekend traffic will come that way, and the railroads won't have a monopoly on land freight."

Along with the new harbor and its grain and export potential, the Wauna complex should inspire the growth of related and supporting industries. Lumber processing and manufacturing is the most logical area. "We grow the trees here. No reason why we shouldn't develop the finished products."

The astonishing investment of private capital at the Wauna site requires a closer look. With an initial expenditure expected to reach \$100 million, why would a corporation pick this spot?

It is, of course, located on the deep water channel which is on the Oregon side at this point. The site includes about 1,000 acres, most of which is undeveloped — and such huge blocks of industrial land are hard to come by. Indeed, the site is also connected by railroad and highway, and an unlimited source of fresh water.

Further, the site is centrally located between Crown's two largest Northwest logging operations — Clatsop and Cathlamet.

But probably the main reason is that it is close to the source of raw materials — a statement which may surprise

a lot of people who have the impression that the Clatsop County area was logged off long ago, and what wasn't logged off was burned off.

This mountainous region between the Willamette River and the Columbia was one of the first to be logged in the profligate "cut out and get out" era around the turn of the century. Then, beginning in 1933 a series of disastrous fires now collectively called the "Tillamook Burn," laid waste to much of it.

A drive through the back country to Astoria via State 202 is a revelation. The gaunt gray spires left over from the burn and the stumps and slash of early day logging are no longer visible on every hand. After more than a half century of fire and exploitation, it is one vast, green Promethean empire, now rehabilitated by tree farms owned and managed by private timber corporations and in replanted state and county lands.

Corps Impact Great

Crown Zellerbach has about 200,000 acres in its Clatsop tree farm alone, plus 80,000 acres in the Stamm tree farm in adjoining Columbia County. Then there are Longview Fibre, and International Paper Co. with huge tracts under perpetual management.

(For its Wauna operation, Crown also will purchase chips from other logging and sawmill firms.)

Moreover, today's timber resources are scientifically managed and utilized. Out of the holocaust of Tillamook Burn, for example, the industry salvaged much more usable lumber than the experts had estimated the area could.



WELL, AUTOGRAPHED remains of Battery Russell, to be integrated along with the South Jetty into Ft. Stevens State Park, symbolizes the attractions which should increase tourism five-fold in the region.

tained before the fires. More efficient utilization in effect creates a "new" resource.

Modern silviculture also is producing commercial timber ready for market in 40 to 50 years, instead of the 75 to 80 years previously needed in nature's timetable — and this on a perpetual basis. And where once only the large prime virgin logs were used and the rest of the tree discarded, today everything is utilized commercially except the breeze which rustles the leaves.

This rebirth of a natural resource is one more major factor for the renaissance of the Astoria area.

The Job Corps? It's made a terrific impact, said Stratton. "But you've got to be realistic. These kids were not daisies or they wouldn't be here. There are always problems with any group that size. But the personnel out there are doing a good job. They are sincere and dedicated and they are succeeding."

The new population has created some county problems in roads and services, but they are dealing with them, he said.

South Jetty To Be Developed

The county is also in the recreation field — building boat ramps, parks, and moorages at Hammond, Warrenton, and other places — or at least cooperating with local and state agencies.

He noted the state was going to develop the old Battery Russell property and the South Jetty as part of Fort Stevens State Park.

"A South Jetty facility would launch fishermen almost into the ocean — and you can't hardly get any closer to good fishing."

Yep, he concluded, folks got a lot of things going for them down here.

There are those who see the recreation and deep-sea sport fishing as the Lower Columbia's secret weapon. It has brought out of retirement such Warrenton citizens as 75-year-old Charlie Cass and much younger Robert (Bob) Johnson, a one-time fish pirate patrol officer.

Cass retired so long ago he can't remember, but last

winter he helped tear out the rotting hulks of buildings and decaying wharves at the boat harbor, and helped build the new facilities — most of which are oriented toward sports fishing.

Charlie works for the Warrenton Boat Yard of Ed Salmi & Sons, which also has gone "sport." Said Elmer Salmi, "From June until bad weather in the fall, this is the greatest deep-sea fishing spot in the country."

Nearby at the new Deep Sea Charters headquarters, owned by Bud Charlton, Bob Johnson was putting on some final paint touches and getting ready for a returning party of Iowans in the spanking new luxurious "waiting room."

Charter Boats Boom

A retired accountant from the Midwest who never has been able to stay away from boats, Johnson recalled a couple years spent commercial fishing in Alaska. He didn't have much luck catching fish so the Pinkertons hired him to catch fish pirates. He was given a list of suspects, and when he found most of the names on the list were friends of his, he went back to the ledgers.

Now fishing is in his blood again — this time in the booming charter boat business.

Anyone who hasn't seen Warrenton in the past five years won't believe it either, but the town is full of new gas stations, restaurants, a new post office, and there's a pervading bustle of prosperity.

Harold C. Gramson, mayor of Warrenton, can be found at his office at the Seaford Division of San Juan Packing Co., of which he is manager. You find him usually in working clothes, a youngish energetic man with crewcut hair and deep brown eyes.

He remembers when they lost the Prouty mill a few years back. A newspaper sent a photographer out to pose him and the city manager in weed over-grown railroad tracks to dramatize the plight of the town.

The "plight" never happened, he said. A new steel mill came in to replace the lost one, and the general economy of the area started climbing as soon as the Young's Bay Bridge was completed.

Fort Stevens State Park, he noted, was not a small factor in Warrenton's economy. Commercial fishing was another, although the river was closed. He remarked on the big boom in bottom fishing — in spite of the Russian fleet offshore.

"I don't see how the Astoria Bridge can help but be of great value to us, making both sides of the river steadily accessible. The ferries are picturesque and all that, but when you have to wait several hours with kids squalling in the back seat . . ."

When the Young's Bay Bridge was opened, folks thought that Astoria would draw trade away from Warrenton. But it has stimulated traffic both ways.

He predicted that with the expansion of Fort Stevens park to take in Battery Russell and the South Jetty, recreation and tourism will increase five-fold.

Once a 3,000-acre wasteland known as Clatsop Sand Plains, Fort Stevens was established in 1864 and named for the first governor of Washington Territory. A planting of stabilizing grasses was begun in the 1930s. The property

was donated by Clatsop County in 1955. Today it is one of the finest parks of its kind in the country.

It has combined overnight camping, day picnic facilities, extensive beaches, attractions like the wreck of the Peter Iredale, several fresh water lakes, swimming, surfing, hiking on primitive trails through forests of salal and manzanita. Most of the year the area is a riot of colorful coastal flowers.

Abandoned Battery Russell, which is disappearing under the encroaching jungle of ferns and foliage, greets the inquisitive tourist at the end of a winding lane like a pre-Columbian ruin in the wilds of Quintana Roo — except for the inscriptions left by visiting teen-agers.

This too will become a part of the expanding park facilities.

Area Facilities Many

Only four miles away to the east is the remarkable Fort Clatsop National Memorial, with the replicas of the first military establishment west of the Rockies where the men of the Lewis and Clark Expedition spent the winter of 1805-1806. First preserved by the Oregon Historical Society, then through local efforts headed by Burnaby M. Bell, who is now staff historian, this first-class memorial attracts an average of 400 tourists a day.

(While the Highway Commission has officially settled upon the uninspired and prosaic "Astoria Bridge" for the new link, there are a lot of people with more romantic souls who think "Lewis and Clark Bridge" would be more fitting.)

Over at Bumblebee Seafoods, Theodore T. Bugas thinks the renaissance began about halfway through the bridge construction, as the lofty span began to soar out from the hill.

"The ferries were more of an irritation than a service — although I'll miss watching them out of my front window."

The only real problem today is housing, he said. "There is not an apartment to rent in the city, and we can't get anybody to come in here and build the several hundred homes we need."

Traffic Lures South

But with increased traffic through the area, he said, it is now up to local businessmen to get visitors to stop and visit awhile — at the magnificent beaches, lakes, clamming areas, fishing and recreational spots.

"We have a historical asset here which can't be overestimated. People are becoming history conscious, and here we have it."

He looks for much expansion in commercial fishing, especially in utilizing the bottom species (which the Russians are doing now offshore). He talked about the new oceanography lab and the exciting new frontier under the sea.

"It is unfortunate that foreign countries seem to realize the potential on our continental shelf more than we. We're seeing the results of this now."

Maybe, he said, the Russian fleet will become sort of a "wet Sputnik" and wake up the rest of the country.

This wouldn't hurt the "new" Astoria, either.



SKELTON of the sailing ship Peter Iredale is visited by a comely Astoria beachcomber. The wrecked

ship serves to contrast old and new fortunes of Astoria and Lower Columbia River.

